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Master of Arts thesis abstract

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Title of thesis Uncovering Treasures– Approaching Sustainability through Renovation in Interior Design

Department Design

Degree programme Creative Sustainability

Year 2014 **Number of pages** 99 **Language** English

Abstract

The production of low quality goods and the constant pursuit for novelty have changed the nature of our lifestyles and the work of interior designers. When our consumption of natural resources is exceeding the capacity of nature to renew itself, perhaps it is time to return to values that have for many years been neglected. This thesis presents an alternative to the business as usual interior design, by promoting an endure and evolve scenario for the work of interior designers, which is to be achieved by recycling and specifying long lasting products in our projects. While analyzing the current trends on the market and a more sustainable alternative, the author provides guidelines towards a changing pattern for the work of the interior designer. These guidelines are supported by a completed project and interviews with professionals that promote renovation in their work. There are treasures to be found among the forgotten and the discarded objects around us, which can enrich our lives with their history and help us protect the fragile environment we live in.

Keywords renovation, sustainability, environment, interior design, wood, furniture manufacturing, design for maintenance and repair, circular economy.

UNCOVERING TREASURES

Approaching Sustainability through Renovation in Interior Design

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School of Arts, Design and Architecture
Department of Design

MA Thesis
Master’s Degree Programme
in Creative Sustainability

Helsinki, Finland. May 2014.

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Book design and binding:
Bianca Byggmästar

Printing: Aalto University

ABSTRACT

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Key words: renovation, sustainability, environment, interior design, wood, furniture manufacturing, design for maintenance and repair, circular economy.

FOREWORD

"Using the discarded, finding a place for the rejected, and reusing the broken are ways of treasuring, honouring and respecting not only the resources of the earth, but also the time, thought and ingenuity that have already gone into these objects. Exploring how to use them again, beyond their first use, is a way of further justifying and valuing their presence in the world."[1]
Stuart Walker

As the author of this thesis, I would like to write a personal note to the reader that would explain my journey in developing and writing this work. Choosing to write on the subject of renovation and promoting the protection of the environment and of people as the key aspects of sustainability are not values that I adopted overnight, but are values that I have been developing an inclination towards for many years.

Perhaps because I am Romanian, I have nature close to my heart. As I ponder my traditions and origins, a phrase comes to mind, a concept contoured by centuries of Romanian literature and culture: "codrul frate cu românul." A phrase that is difficult to translate into English, it means something along the lines "nature, brother to the Romanian," but the word "codru" has a far deeper meaning, being also associated with shelter and protection. In my family, we learned to appreciate our possessions, our land, and those around us, as we worked hard to obtain our livelihood. Nothing was taken for granted and life was rich, full of opportunities to learn and diversify one's skills. This sometimes meant helping to plant the garden, or making kilograms of jam with my mother and grandmother. It also meant learning how to sew, to repair things, and to find a purpose for every small possession. The patterns I learned as a girl living at home I also see now in my life in Finland. Perhaps the values are not as strong, but they exist in the culture and the past is not yet lost. These values can be brought back and become part of everyone's life. I believe that valuing life and everything around us is not something unique to one culture, but it is something found in all cultures, something that modernity has rejected and attempted to destroy in so many parts of the world.

[1] Stuart Walker, "Extant Objects: Designing things as they are," *Int. J. Sustainable Design* 1, no. 1 (2008): 8.

From the beginning of my academic studies, I have been inclined towards adopting sustainable design as my area of focus professionally. The first course I took on the subject, taught by my beloved teacher Pamm Steffen at Mount Mary University in Milwaukee, USA, introduced sustainable design and no other concept could make more sense to me. This is why I continued to study sustainability and to specialize in this field of interior design. For me, there is no other way; I see no alternative that is worth pursuing for my sake and that of those around me.

The damage our material culture has done to our natural environment and to people is a very clear issue for me. It is something I can discern on a daily basis as I browse the news, meet with people, and observe the surroundings I live in. Destroying our Earth is nothing within our nature as people. We have been corrupted by money, profit, and love for materialism, but this is not who we are. We belong in a safe and beautiful environment, we long for shelter and love in our lives. Our choices can make a difference and so I have made mine. The way I live and the work I do can be an influence for good. So in my work, I choose sustainability; I choose to value places and things that have been neglected or even discarded. I also choose to educate my clients to do the same. Perhaps not everyone will accept these ideas at first, but when people see the beauty in quality and the timelessness of value, they can learn to keep rather than discard and to recycle rather than destroy.

Bianca Byggmästar

ACKNOWLEDGEMENTS

As the author of this thesis, I would like to thank those that have assisted me through the journey of writing this work and completing my studies. I would like to thank my late professor from high school, Marcel Munteanu that believed in my talent as a designer and inspired me to take this path for my career. I would like to thank my professors from Mount Mary University, Pamm Steffen, Dennis Klopfer, and Leona Knobloch-Nelson, for all the knowledge they entrusted me, and for their constant emotional support throughout my four years in college. I would like to thank my dear friend Paige Conley, for her example and inspiration. I would like to thank Tiina Laurila, Programme Director of the Master´s Degree Programme in Creative Sustainability, Aalto University, for her role in shaping my education, for giving me the opportunity to work on the project completed for this thesis, and for the constant support throughout my Master's studies. I would like to thank the people from Scandic for trusting me enough to design and manage the renovation project completed for them. I would like to thank my project tutor and former co-worker, Tiina Rytkönen, for her guidance and inspiration in this process. I would like to thank my thesis tutor, Timo Ripatti, for all his support and advice during the writing process. I would like to thank my friend Anja-Lisa Hirscher, for all her help with photography and graphic design that has enriched the quality of this book. I would like to thank all the professionals that agreed to be interviewed for this book, for sharing some of their trade secrets, and for making this work better. I would like to thank my bookbinding teacher, Juha Markula, for teaching me the skills needed for binding this book. I would like to thank my English professors, especially my elementary teacher Ian, for promising me that one day I will be a star, and to Paula Reiter from Mount Mary University, that taught me academic writing. I would like to thank my family, for the constant love and support they offer in my life, especially my mother, Lia. She has been my greatest example of love, patience, and perseverance in life. And most of all, I would like to thank my eternal companion, the love of my life, without whom my life would not be complete, Andreas.

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In the introduction chapter, the author presents the scope of this thesis and the aims that have driven the work on the subject of renovation. This chapter also examines the concept of an endure and evolve scenario as a model for sustainability applied to interior spaces and their elements. Further, the introduction chapter will reveal the research and methodology the author has used in writing this thesis.

This thesis explores the practice of renovation as a valuable aspect of sustainable interior design, in the effort to encourage its use on the construction market, given the lack of information available in sustainable design education and literature. In the context of a market economy that demands consumption and values novelty, this work promotes traditional methods of manufacturing and design for maintenance and repair that simultaneously strengthen the social aspect of sustainability with the environmental and the economic. The research questions regarding this thesis focus on developing an understanding on why renovation is needed on the interior design market, how a successful renovation is to be achieved in the context of design for maintenance and repair, and what work is currently done in the field.

The aim of this work is to offer enough background information on the practice of renovation, which will uncover its potential as an accessible and sustainable practice for interior designers. This is done by offering support research in aspects related to the interior design field, together with an analysis of a completed project – done as background material for this thesis – and examples of explorations in the field of interior design renovation that are present on the market today. The aim of this work supports the author's beliefs that not only are there less material resources consumed in renovation versus regular practice, but the work itself is more rewarding to the professional and to the customer by creating interior spaces that offer richer aesthetic experiences in the blending of the old with the new. While this work provides information about the need for renovation on the market and addresses issues concerning methods for practical approach to a project, it is limited in comparing the financial aspects surrounding renovation and those of regular practice, information that would be needed in order to fully examine the benefits of renovation. Therefore, this thesis work should be taken as an introduction to the possibilities surrounding renovation and a discussion of values from a sustainability theory point of view.

By "regular practice" the author understands the common way of discarding all the existing elements from an interior before replacing them with completely new ones. This practice starts in the design office, where the designer creates virtual solutions to suit a space, by compiling new elements (furniture,

finishes, etc.) available from the product libraries of different manufacturers. These concepts are presented to the client and are constantly modified to suit the client's needs and wants, and to fit within a budget. When all the different aspects of the new project are completed, the demolition of the old space starts and the interior is ready for new construction. This practice has removed the designer from the actual space to be designed and relocated him/her to the office, where ideas and solutions are filtered in team discussions before they even reach the client. Quotas and offers are provided from different manufacturers for these projects, and the designer looks more like a business coordinator than a creator of interior spaces. While this practice is necessary when dealing with completely new buildings or severely damaged interiors, it is perhaps overused in spaces that could benefit from less intervention.

The need for approaching this thesis subject therefore lies in the sustainable design education and literature geared toward the interior design professional that focus mainly on new construction, and rarely actually deviate from the outlines of the usual practice of branding a particular interior space with commercial products. Whether these products are manufactured ethically and with environmentally friendly processes, whether they contain recycled materials, or whether they promise good quality and a long life cycle, they are still mostly new. The interior designer is a salesman, and in concrete terms, sustainable interior design versus the regular procedure is portrayed as a practice of material replacement and scientific collaboration in construction. To further explain this statement, the material replacement translates into the substitution of materials used in a project, from those with toxic and questionable components and manufacturing methods, to those labeled as sustainable or green; and the scientific collaboration represents the emphasis on the importance of tight cooperation between the experts of different fields (architects, engineers, designers) during the different design phases of a project, the practice of integrated design. It is important to mention also the tool palette of the designer, which includes new construction methods and site analysis that are illustrated by various examples of completed projects, together with lists of available resources for the building professional and systems for green construction evaluation. While all these valuable sources of information are crucial to the development of sustainable design as a field, the author of this thesis has found their aspect to be commercial and that to an extent it encourages the same type of business that has created the need for the emergence of sustainable design as a field.

As a consequence, renovation is promoted in this work as an alternative to the commercially driven interior design

prevalent in business, and a solution to the practice of discarding and replacing products, which is predominantly used today. Renovation is not a new practice in interior design, but it can become a significant source for work in the field of sustainable design when its benefits and working methods are established. While in its true sense of the word, renovation prevails in the domestic market, there should be no limitations to it expanding on the contract market (office, hospitality, and retail). In all circumstances, renovation, as opposed to redesign, requires different planning on the part of the designer. As it demands a more detailed analysis of the condition of spaces and goods, in practice, renovation translates into design out of the office and more manual labor on site, a process that will be further discussed in this thesis work.

Given the different definitions of the term sustainability, the author felt it necessary to choose a direction for this work. In Sustainability and Services (2001),[2] Walter R. Stahel argues for the consideration of five aspects, or pillars, when analyzing sustainability. These pillars focus on the protection of the environment and the wellbeing of people, which in turn bring business and economic prosperity. As opposed to other definitions of sustainability, focusing on the economy in equal measure to the wellbeing of the environment and people is defined as a natural result of sustainable economical activity. The reasoning behind choosing this definition is that profit can serve as a powerful threat to the earth and its inhabitants when it is a strong business goal. Its results are green washing and conspicuous activities such as lack of transparency, trafficking of goods, and various methods of human labor exploitation. Although more complex, Stahel's model of sustainability leaves less room for bargaining, and was thus chosen for this work.

As defined by Stahel, sustainability begins with nature conservation, which should be approached through abiding by the precautionary principle. This entails that man should make no activities or interventions, unless they have been proven safe for the natural environment and for people. This leads to the second principle of health and safety, which is achieved by using non-toxic materials in the input and output processes of production, and results in products that are safe to use and dispose of. By protecting nature and promoting health and safety, the sustainability model argues for an increase in economic competitiveness and the third principle of increased resource productivity. A sustainable economy would then lead to a sustainable society and would focus on the fourth and fifth principles of sustainability, that of social ecology (jobs and wants, sharing and caring), and that of cultural ecology (the choice between sufficiency and efficiency).

This model of sustainability can be applied to practice; although not specifically geared toward interior design as written by its author, a simple and sensible approach is the "endure and evolve scenario"[3] presented by Professor Stuart Walker in his article, Statement of Practice (2010). Like Stahel, Walker is concerned with the current practice of designing and manufacturing goods and offers a strategy that would become more consistent with the social and environmental aspects of sustainability. In addition, Walker emphasizes the need to make material goods "enduring and

[2] Walter R. Stahel, "*Sustainability and Services,*" in *Sustainable Solutions – developing products and services for the future*, ed. Charter Martin and Tischner Ursula (Greenleaf Publishing, 2001): 151 – 164.

[3] Stuart Walker, "Statement of Practice," *Design and Culture* 2, no. 1 (2010): 55, doi: 10.2752/175470710X12593419555162.

personally meaningful elements of our culture."[4] The key factor in Walker's approach is design for maintenance and repair, which is supported by a product-maintenance infrastructure and generates local employment and economy, while bringing environmental benefits and value to our material culture. This practice, of design that can endure and evolve, has been neglected by businesses in the last years and replaced by newer and short-lived fashions. However, it is indeed a treasure to the contemporary interior designer who cares about the environment and aims to create meaningful work for society. It is therefore the intent of the author to promote this concept in this thesis, to expand on the different aspects that design for maintenance and repair would bring to the interior designer's work, and to offer an insight into the practice of renovation, which the author understands to embody the elements of this practice. Design for maintenance and repair is a powerful tool for promoting a sustainable lifestyle and for advancing business toward a system that can support the needs and wellbeing of local communities by promoting employment and a wise use of natural resources.

[4] Ibid., 45.

The idea of writing on the subject of renovation was developed after the completion of a project while the author was working as a freelance designer for Scandic Continental,[5] the largest hotel in Helsinki, Finland. This project had a different approach than the methods used while working for private businesses on other interiors, and one of the greatest insights the work brought was into the practical work completed during the construction phase of a project. The project required involvement in all the phases of design from the part of the designer, and rewarded her with valuable skills in furniture restoration and in interior renovation and maintenance. While working, the hidden potential for renovation work in design for sustainability became a topic to pursue further, and after the completion of the project and the start of research for thesis writing, it became clear that the practice of renovation is not very often used in the current commercial work of interior designers.

The research was carried out by analyzing the different stages of the project completed for Scandic Continental, and by gathering information from books, articles, and institutions that have a goal in promoting sustainability. Professionals were also interviewed, to bring insight and credibility to the research from a business point of view, and to fill in gaps of information not otherwise available. The author has selected the circular model for economy, developed by Walter R. Stahel and the Product-Life Institute, as the mechanism for the practical implementation of the ideas discussed in this work. All this information is presented in the order of concepts theorized by Professor Stuart Walker in his guidelines to design for maintenance and repair,[6] which form the "endure and evolve scenario" – as described by the author. The ideas of Stuart Walker and the writings of Walter R. Stahel on the subject of sustainability were chosen as the main framework for the thesis.

The work in this thesis progresses from an insight into the importance of renovation to the different aspects of design for maintenance and repair and some of its implications in current business. In the opening chapter about renovation, Why renovation?, current production practices are analyzed in order to illustrate the need for a longer utilization of goods and what that would mean in environmental and cultural terms – in other words, the benefits of renovation versus regular practice. To conclude this chapter, an insight into the circular model for economy, as presented by Stahel, is discussed to emphasize the

[5] The name of the hotel has changed since 2014 to "Scandic Park Hotel."
[6] Walker, "Statement of Practice," 55-59.

implications of renovation projects in the strengthening of local economy through local employment. In the following chapter, Design for maintenance and repair, the author has chosen to begin with a discussion about materials. The focus here is on wood and wood composites due to the versatile nature of wood, its wide use in the built environment, particularly in furniture, and the controversies associated with the use of wood and environmental sustainability. There is a striking contrast between the reparability of products depending on whether they are made of solid wood or composites, which offers a good introduction to the chapter of design for maintenance and repair and what this entails. The chapter continues with an exploration of product manufacturing, exemplified by a Finnish furniture manufacturer, and develops into a discussion about the implications of the interior designer in renovation work and an interview with an interior architect. Following, the chapter examines a product-maintenance infrastructure and resources available for furniture maintenance and repair. This section then concludes with an interview with a furniture restorer that gives a personal insight into the subject at hand. The discussion flows into the succeeding chapter, Renovation in practice, with a comprehensive analysis of the author's renovation project for Scandic Continental Helsinki, mentioned earlier. This chapter concludes with the author's insight into possible avenues for business and examples of work in the field of renovation in Finland by Finnish businesses and institutions. The thesis then develops toward the last chapter, Conclusions, which reviews the whole work and offers ideas for further development.

Chapter 2 focuses on the analysis of different aspects of renovation and begins by assessing the current production practices and their resulting damages to our environment and society. This section is followed by an argument for the longer utilization of goods, followed by a discussion about benefits of renovation versus the regular practice in interior design. These benefits include environmental benefits and the value added to our material culture. The section then concludes with an analysis of the circular model for economy and its benefits to society and the environment.

to renovate ● verb [with object] restore (something old, especially a building) to a good state of repair. Origin: early 16th century: from Latin renovat- 'made new again', from the verb renovare, from re- 'back, again' +novus 'new.'

Oxford Dictionaries, s. v. "renovate," accessed April 8, 2013, http://oxforddictionaries.com/.

The technology for production available today has been developed and perfected throughout years of industrialization to reduce human error and to produce better results versus manual labor. As a result, prosperity has increased, but so has the mass production of cheaper and disposable goods. Although "the negative influence of disposable products, and other interventions which undermine sustainability, does not indicate malicious intent on the part of their designers, but rather is evidence that the social and cultural impact of such interventions was not considered to its fullest extent,"[7] during the last 50 years, production has been shifted from providing the necessary for human existence toward the pursuit of the mere economic interest of various individuals. Walter Stahel has talked about this concern already in 1982, when he wrote that the preoccupation economists had with production-optimization, economy of scale and fast depreciation and replacement already started creating "goods and products characterized by lack of reparability."[8] Stahel continued by explaining that only shortening the life of products, and thus creating the need for faster replacement, could have achieved a higher production volume in a stagnant market. This market strategy has spurred growth, maximized immediate business profits, and in return promised to offer pleasure to the users of the numerous products on the market, pleasure which has proven to be nothing but temporary and addicting.[9]

[7] Nathan Stegall, "Designing for Sustainability: A Philosophy for Ecologically Intentional Design," *Design Issues* 22, no. 2 (2006): 3.
[8] Walter R. Stahel, *Product-Life Factor*, Product-Life Institute, Geneva, accessed April 10, 2013, http://www.product-life.org/en/major-publications/the-product-life-factor.
[9] Walker, "Extant Objects," 5.

"No designer ever intentionally suggested that people should value sloth over their own health, that economic gain outweighs environmental destruction, or that convenience is more important than competence, but today we can look back on a sea of products and services that encourage these beliefs."[10]
Nathan Stegall

This pursuit of businesses all over the world has resulted in a continual search for novelty and style trends, which further contribute to deepening people's compulsive consumption. Among a variety of tactics, the aggressive promotion of dissatisfaction with one's possessions through marketing has proven very successful. As Helga Dittmar explains in her book, Consumer Culture, Identity and Well-being (2012), it is difficult to overestimate the impact consumer culture has had on the economical, sociocultural, and psychological levels of society since the 1950's until today.[11] It is essential to also remember that design is "an art of thought and communication that can induce in others a wide range of beliefs about practical life for the individual and for groups."[12] However, not only has the pursuit of businesses, coupled with the talent of designers, done tremendous damage to individuals, it has also fueled numerous extremely damaging environmental and social manufacturing practices which make use of hazardous chemicals meant to reduce manufacturing costs.

While the impact of global widespread business practices is easy to measure in economical terms by analyzing profits, the social and environmental impacts are less accessible. Despite all the financial growth, the increasing number of recent works promoting sustainability gives a glimpse into the damages caused by such practices, with wildlife, populations, and the environment suffering. When taking the natural environment into focus, perhaps the largest problems are the aggressive consumption of natural resources and the dangerous accumulation of waste, which both lead to loss of biodiversity and endanger human health. People, on the other hand, are now living in indoor environments with levels of air toxicity higher than those of the outside polluted environment[13] and suffer from an increasing number of indoor air quality related illnesses and others caused by poor planning. These consequences of business practice have most certainly not been taken into account when setting business goals and aiming for growth.

[10] Stegall, "Designing for Sustainability," 3.
[11] Helga Dittmer, *Consumer Culture, Identity and Well-being: the search for the 'good life' and the 'body perfect'* (East Sussex: Psychology Press, 2012), 1.
[12] Richard Buchanan, "Declaration by Design: Rhetoric, Argument, and Demonstration in Design Practice," in *Design Discourse*, ed. Victor Margolin (Chicago: University of Chicago Press, 1989), 94, quoted in Stegall, "Designing for Sustainability," 58.
[13] Penny Bonda and Katie Sosnowchik, *Sustainable Commercial Interiors* (New Jersey: John Wiley & Sons, 2007), 53.

An example of overconsumption and damages to the environment and society that should specifically interest interior designers is that of the construction industry. It is estimated that 20% of all global resources are used in building construction, and in Europe the construction industry uses more raw material by weight than any of the other industries.[14] Construction waste generated in the European Union in 2010 accounted for 1 721 kg/person,[15] compared to municipal waste, which accounted for 502 kg/person.[16] This waste represents 31% of the total waste generation in the EU,[17] and while in some countries this waste is over 90% recycled, in others the percentage is very low, making the average within the Union approximately 50%.[18] Although there is much room for improvement, construction waste can be recycled at a very high rate and, at least within the EU, important measures are being taken to ensure that the percentage of recycled waste continues to grow.[19]

A very important part of the resources consumed by the construction industry are the world's forests, with 25% of the world's harvest going into construction.[20] If it is estimated that in some countries as much as 80% of timber is sourced illegally,[21] then the picture of unsustainable harvest of materials and its damages to the earth becomes clearer. Not only is local flora and fauna in such areas endangered, but unsustainable management of the world's forests has other serious consequences, such as exposure to natural disasters, soil depletion, and the loss of an important source of clean air.[22] It is important to note here that a large quantity of the wood processed in EU countries is of foreign origin.[23] Thus, while Europe is protecting its own forests, and the annual stock is actually increasing,[24] the European economical activity is a cause of forest depletion in other areas of the world.

[14] Siân Moxon, *Sustainability in Interior Design* (London: Laurence King Publishing, 2012), 13.
[15] European Commission Eurostat, accessed May 1, 2014, http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do.
[16] European Commission Eurostat, *Figures for the Future. 20 years of sustainable development in Europe? A guide for citizens*, 2012 edition (Luxembourg: Publication Office of the European Union, 2011), 80, http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-32-12-152/EN/KS-32-12-152-EN.PDF.
[17] European Environment Agency, *EU as a Recycling Society: Present recycling levels of Municipal Waste and Construction & Demolition Waste in the EU,* April 2009, 25, http://scp.eionet.europa.eu/publications/wp2009_2/wp/WP2009_2.
[18] Ibid., 30.
[19] Ibid., 31-63.
[20] Moxon, *Sustainability in Interior Design*, 12.
[21] Ibid., 12.
[22] Lester R. Brown, *Plan B 2.0: Rescuing a Planet Under Stress and a Civilization in Trouble* (New York: W. W. Norton and Company, 2006), 79-98.
[23] European Commission Eurostat, *Forestry in the EU and the World: A statistical portrait*, 2011 edition (Luxembourg: Publication Office of the European Union, 2011), 47, http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-31-11-137/EN/KS-31-11-137-EN.PDF.
[24] Ibid., 11.

An important contribution that can be made to ensure sustainable consumption is a longer utilization of goods. This is evident in the material culture of today, which – in the process of manufacturing, distributing, using, and eventually discarding goods – has efficiently developed a system that annually produces "countless millions of relatively inexpensive products from mixed, often toxic, materials that last just a few years, and for which there are no effective, environmentally responsible systems for recovery and reprocessing."[25] This is evident from the statistics published by the European Union, which show that hazardous waste levels are growing. While in 2004 the figures mentioned 181 kg/person, in 2009 the level had risen to 196 kg/person.[26] The products that are being discarded as hazardous to our health and that of the environment are the result of trends. They are the outcome of invented needs, pushed on the market by persuasive advertising, and which promise various benefits that in reality cannot be associated with material goods. As Viktor Papanek explained, "That which we throw away, we fail to value."[27] More so, designing for disposal and designing things that when discarded become hazardous waste reflects insufficient care in planning or in considering safety factors.

The quality and safety of the products available on the market should be of specific importance to interior designers, as people in the western world spend most of their daily time indoors, an average of 90%.[28] With this figure being so high, it is no wonder that the choices of the designer directly affect the wellbeing and health of those who use interior spaces. Perhaps this is something that is not even taught principally in design schools, where most often the focus is still on artistic and aesthetic considerations. This is evident from the focus of the contemporary designers' work, which is still "almost entirely on the physical issues surrounding a new product or technology."[29] However, whether designers are knowledgeable or not about the impact of their work, ignorance does not relieve the inherent results of poor choices.

The quality of the majority of the products marketed today is in need of reassessment, and this is an area where the work of designers can have an important contribution toward design for sustainability. "In order to work more intelligently, the whole practice of design has to be turned around. Designers can no longer be the employees of corporations, but rather must work directly for the client group – that is, the

[25] Walker, "Statement of Practice," 55.
[26] European Commission Eurostat, *Figures for the Future*, 82.
[27] Victor Papanek, preface to *Design for the Real World: Making to Measure* (London: Thames and Hudson LTD., 1972), 74.
[28] Moxon, *Sustainability in Interior Design*, 12.
[29] Stegall, "Designing for Sustainability," 3.

people who are in need of a product."[30] Instead of focusing on business as usual, designers can advocate for a longer utilization of their products or services, by simply designing quality into their work and by instilling an understanding of the importance of sustainability to the greater public.[31]

[30] Papanek, *Design for the Real World*, 92.
[31] T. F. H. Allen, Josepf A. Tainter, and T. W. Hoekstra, "Supply-Side Sustainability," *Systems Research and Behavioral Science* 16 (1999): 424.

First and foremost, reusing, recycling and repairing – all essential to the renovation practice – can contribute significantly to waste reduction. This happens when the products, which are to be saved, have their lives extended and are not disposed of. All materials have a "backpack" of resources behind them that are lost when the product is cast out, and are preserved when the life of the product is extended. The sums of these "backpacks" differ with various materials, but they are the result of mining waste and environmental impairment.[32] Therefore, waste can be defined as "not obtaining 100% from purchases and investments,"[33] when the potential of materials is not exploited to its fullest. The practices of reusing, recycling, and repairing increase the percentage of material efficiency and contribute to waste reduction.

In essence, renovation ensures a longer utilization of goods by extending the life of a product, and by so doing it contributes to environmental sustainability. Doubling the useful life of goods leads to a reduction of 50% in the amount of resources needed for production, as well as in the amount of waste resulted in the end of the product life cycle. The 50% reduction in resource consumption also applies to all the services related to the product life cycle, such as distribution, advertising, waste transport, and disposal. It is estimated that 75% of all energy embodied in a product is used in the production of materials alone, while the other 25% is determined during assembly. When a product is renovated, the labor is shifted from the factory to the hands of the qualified individual who restores the product, thus enhancing social ecology and contributing to the local economy. When the work of restoration is performed, 75% of labor is used in assembly, and only 25% in material production.[34] Certainly, saving materials as much as possible contributes significantly to the preservation of our natural environment and reflects a prudent and wise business practice.

There are different methods and tools available to the interior designer that can aid in the analysis of the environmental impact of a project. Since many of these do not specifically address the needs of the interior designer, they can often be difficult to understand. These tools usually demand an extended research into product manufacturing and require a substantial amount of information that is not always readily available, since manufacturers are not necessarily willing to release it. Although the designer might not have the resources to use sustainability indicators when working on a project, these

[32] Walter R. Stahel, *The business angle of a Circular Economy – Higher Competitiveness, Higher Resource Security and Material Efficiency,* Ellen MacArthur Foundation, 2012, 4, http://slideshare.net/CircularEconomy/article-walter-stahel-on-circular-economy.
[33] Jonathan T. Scott, *The Sustainable Business: A Practitioner's Guide to achieving Long-term Profitability and Competitiveness 2nd edition* (Sheffield: Greenleaf Publishing Limited, 2013), 20, http://www.efmd.org/images/stories/efmd/downloadables/TSB/tsb2.pdf.
[34] Stahel, *"Sustainability and Services,"* 161.

indicators provide a useful list of things to keep in mind when designing and can guide the design process toward design for sustainability.

Some of the tools available to the designer interested in sustainability are building rating systems such as LEED[35] and BREEAM.[36] LEED offers specific guidelines to interior designers, in a separate category for Interior Design and Construction. Credits are given to a project for performance in different categories, which are Integrative Process, Location and Transportation, Water Efficiency, Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality, Innovations, and Regional Priority. While LEED is primarily used on the US market, BREEAM is preferred in Europe, as it is based on European legislation and is easier to integrate in the system. The BREEAM credentials are offered in country specific schemes, or on an international scheme. These schemes offer environmental assessment methods that embody all the stages of a building's lifecycle. The BREEAM categories for assessment are New Construction, Refurbishment, In-Use, and Communities Bespoke. These resources can be accessed or bought from the provider's website, or accredited professionals can be contacted for assistance.

In addition to building rating systems, the interior designer can use Life Cycle Assessment tools and eco-labels to determine the environmental impact of a project. Life cycle assessment (LCA) is used for the evaluation of environmental performance "throughout the sequence of activities executed in creating a product or performing a service."[37] The evaluation measures the extraction and consumption of resources, as well as the environmental impact of these services as a result of air, water, and soil releases. Where project resources allow, the designer can access various publications that instruct professionals on how to perform life cycle assessments, a comprehensive guide can be found from the United Nations Environmental Programme,[38] for example. To ease the LCA approach, however, different ecological labeling systems have been established by organizations that support the protection of the natural environment. Some of these labels include the EU Flower Ecolabel,[39] the Nordic Ecolabel,[40] or the Cradle-to-Cradle label.[41] Although some of these tools are relatively new on the market, the number of certified products grows each year, which has lead to the diversification of product categories that now include furniture, paint, and other interior finishes and materials.

[35] http://www.usgbc.org/leed.
[36] http://www.breeam.org.
[37] United Nations Environmental Programme, *Global Guidance Principles for Life Cycle Assessment Databases – A Basis for Greener Processes and Products*, 2011, http://www.unep.fr/shared/publications/pdf/DTIx1410xPA-GlobalGuidancePrinciplesforLCA.pdf.
[38] http://www.unep.org.
[39] http://ec.europa.eu/environment/ecolabel/eu-ecolabel-for-businesses.html.
[40] http://www.nordic-ecolabel.org.
[41] http://www.c2ccertified.org.

"When people are persuaded, advertized, propagandized, and victimized into throwing away their cars every 3 years, their clothes twice yearly, their high-fidelity sets every few years, their houses every 5 years... then we may consider most other things fully obsolete. Throwing away furniture, transportation, clothing, and appliances may soon lead us to feel that marriages (and other personal relationships) are throw-away items as well and that on a global scale countries, and indeed entire subcontinents, are disposable like Kleenex."[42]
Victor Papanek

The current production industry fails to include many of the aspects associated with manufacturing when estimating its true costs, which are in turn externalized and allow for prices to be maintained low.[43] Some of these 'externalities' are pollution, resource depletion, and the social consequences of unemployment. More so, a product usually has passed through many hands before it reaches the consumer. Thus, "for a given item the sum of its intermediate prices as it progresses down the supply chain will exceed the final price charged to the final consumer."[44] In addition, not "telling the ecological truth" can lead many corporations into bankruptcy, affecting the life of millions of people.[45]

The globalized economy world has disconnected people from each other and has made it possible for decision-makers to indirectly promote injustice, as labor is shifted from one country to another and the consumer is disconnected from the process of manufacturing his or her lifestyle. This has happened as a result of practices such as, "short-term thinking, outsourcing and offshoring [that] are focused on maximizing competitiveness and profit while relying on virgin resources and cheap energy. They are usually indifferent to consequences of social inequity, resource and habitat depletion, waste and pollution, in their demand for continuous growth."[46] Therefore, it is of great consequence to reestablish a human connection between the consumer and the producer, a connection that would generate a greater appreciation for goods and the labor that goes into producing them.

It is no more a question whether the material culture of today has convinced people to lower their values. Stuart Walker explains that the "error of modernism," that of assigning primary value to utility – the utility of the machine and the "lightly questionable" social utility of its style – has failed.[47] All the things that have value can only

[42] Papanek, *Design for the Real World*, 74.
[43] Stuart Walker, *Sustainable by Design: Explorations in Theory and Practice* (London: Earthscan, 2007), 80-81.
[44] Ken Green, Barbara Morton and Steve New, *"Greening Organizations: purchasing, consumption and innovation,"* in *Innovation by demand*, ed. Andrew McMeekin and others (Manchester: Manchester University Press, 2002), 130.
[45] Brown, *Plan B 2.0*, 15-17.
[46] Walker, "Cack-handed design," 28.
[47] Walker, *Sustainable by Design*, 202.

be those that in turn are useless, those things that can endure and make our lives meaningful.

Another aspect of importance is to understand that organizations act as consumers in many respects, and that the decisions they make affect their consumers directly. Their purchases of services needed for production have a direct impact on the environment as well as those of regular consumers, and contribute to resource depletion, pollution, and waste when companies choose their suppliers and manufacturing methods.[48] Organizational purchasing can look more like 'end consumer purchasing' and may not even be carried out by specialists.[49] Within organizations, "a considerable amount of purchasing is controlled by a body of people who have a professional commitment to a set of values, practices and norms, sometimes being members of professional associations."[50] Therefore, it is safe to say that the decisions companies make are very much the result of people and their choices, and as with all people, their values can change. Whether companies become aware of the effects of their purchases and choose to change their patterns of consumption is in the end the responsibility of people. A positive example of organizational purchasing and value setting is the European Union. For the year 2014, 41,6 % of the EU budget, representing almost 60 billion euros, has been dedicated to sustainable growth with a focus on natural resources.[51] This step is an important indicator of the efforts the Union is making towards social and environmental protection, values that are clearly discussed in the General Union Environment Action Programme to 2020 "Living well, within the limits of our planet." Some of the key issues examined in this document relate to the management of resources, pollution control, environmental protection, environmental impact, and economic growth. Within the EU, the plan is that in the year 2050, "we live well, within the planet's ecological limits. Our prosperity and healthy environment stem from an innovative, circular economy where nothing is wasted and where natural resources are managed sustainably, and biodiversity is protected, valued and restored in ways that enhance our society's resilience. Our low-carbon growth has long been decoupled from resource use, setting the pace for a safe and sustainable global society."[52] While the plan for the future is positive, the EU and legislation cannot manage sustainable growth without the support of businesses and other organizations. As

[48] Green, Morton, and New, *"Greening Organizations,"* 129-130.
[49] Ibid., 134.
[50] Ibid., 135.
[51] European Comision, *Financial programming and budget: Budget 2014 in figures*, Feb 19, 2014, http://ec.europa.eu/budget/figures/2014/2014_en.cfm.
[52] European Parliament, "Decision No 1386/2013/EU," *Official Journal of the European Union*, L 354/171 (2013), http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32013D1386.

Janez Potočnik, European Commissioner for Environment, stressed in an interview for the Internal Voices magazine of the United Nations Regional Information Centre for Western Europe, we cannot wait for governments alone to take the initiative; businesses should also take practical steps in this direction.[53]

[53] United Nations Regional Information Centre for Western Europe, "Interview with Janez Potočnik," *Internal Voices*, accessed Apr 15, 2014, http://www.unric.org/en/rio20/27611-interview-with-janez-potonik-for-internal-voices-magazine.

"The production of articles that nobody really needs, but which occupy the ground floors of all big stores, is one of the many outward symptoms of something basically wrong in a world of overproduction and undernourishment."[54]
Victor Papanek

To further increase the life of a product, it can be designed in a manner that allows for quality maintenance and repair. A long life can be one of its essential features.[55] When the quality, performance and value of the existing material stock in an economy are preserved, the results are wealth and welfare.[56] This is explained by the shift of labor from the extraction and manufacturing industries to the local, smaller businesses. In essence, while labor is still performed, more people can be employed because the number of skilled jobs increases and energy is substituted by manpower.

tions, and also to the European Union. A circular economy is based on the principles of sustainability, which were previously discussed in the introduction of this paper, and one of its most important elements is a longer utilization of goods. By implementing nature conservation and health and safety (toxicity of materials), a business will have the benefit of increased resource productivity and contribute to social and cultural ecology.

The linear economy (Figure 1) can change to a circular economy (Figure 2) by the introduction of three loops: a reuse and remarketing loop for goods (Loop 3), a loop (Loop 1) for product life extension activities for goods, and a loop (Loop 2) for the recycling of materials, which become secondary sources, instead of waste. While loops 1 and 2 require intervention from the part of the manufacturing industry and the use of energy for reprocessing of

Figure 1. The Linear Economy

The Product-Life Institute[57] in Geneva and Walter Stahel have been working since 1982 on their model for a circular economy, as an alternative to the linear economy we still use today. The institute provides business consultations to many of the world's corporamaterials and goods, loop 3 extends the life of products through a less energy consuming process of re-use and remarketing. The two junctions represented in Figure 2, show the cost advantages to product life extension versus new goods (Junction 1), and those of recy-

[54] Papanek, *Design for the Real World*, 63.
[55] Paul Hawken, Amory Lovins, and L. Hunter Lovins, *Natural Capitalism: Creating the Next Industrial Revolution* (New York: Little, Brown and Company, 2000), 79.
[56] Stahel, *The business angle of a Circular Economy*, 5.
[57] http://www.product-life.org.

cling materials versus virgin material extraction (Junction 2). When goods are repaired, reconditioned, or upgraded, fewer resources are needed for production, which in turn reduce manufacturing costs. By the recycling of materials, shown in junction 2, virgin materials are spared from extraction and the stock for manufacturing can be replenished at a lower cost.

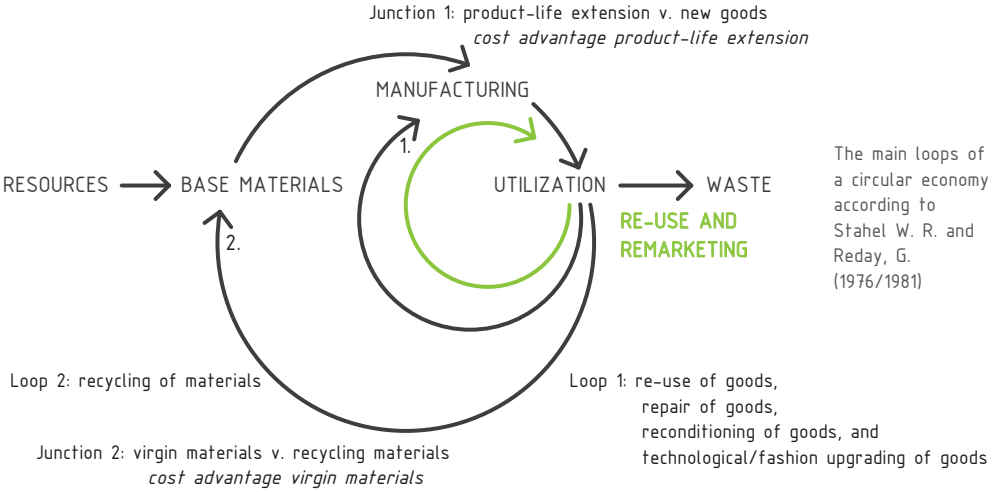


Figure 2. The Circular Economy[58]

A circular economy functions according to five principles, most of which are unknown to policy makers and economic actors. Aside from the fifth principle, the others do not exist in a linear economy. Thus it is difficult to measure their impact on the economy when applied. These five principles are as follows:
Principle 1: The smaller the loop (activity-wise and geographically) the more profitable and resource efficient it is.
Principle 2: Loops have no beginning and no end.
Principle 3: The speed of the circular flows is crucial: the efficiency of managing stock in the circular economy increases with a decreasing flow speed.
Principle 4: Continued ownership is cost efficient: re-use, repair and remanufacture without a change of ownership save double transaction costs.
Principle 5: A circular economy needs functioning markets.

As stated by Stahel, a linear economy can be transformed into a circular economy by “reducing the economic importance of resource extraction and

[58] Stahel, *The business angle of a Circular Economy*, 3. Figure redrawn by the author of the thesis.

waste management, and also reducing the environmental impairment caused by these industrial sectors."[59] This is realized by a more efficient and sufficient utilization of materials and resources. Material efficiency can be achieved using innovations in the technical and commercial stages of product manufacturing and distribution that have as target the reduction of waste, but it can also be achieved in the ownership stage, in the way a finished product is preserved. Moreover, material and resource efficiency can be increased through shared utilization or serial utilization of goods. Resource sufficiency relates to the "re-use and service life extension of manufactured goods."[60] As a result, a circular economy is characterized by a more intelligent use of human labor and the creation of jobs regionally.

Given the discussion in this thesis on the subject of renovation, it is important to introduce the role of each actor involved in the process from the context of a circular economy. In Figure 3, the author has redrawn Stahel's and Reday's model to include the designer with an important role in the renovation process. A project is generated by the need of a client, which turns to a designer (or architect) for assistance. The designer has knowledge about the construction market and what is most suitable for use in a certain application, and therefore serves a very important role in a project. The designer decides, sometimes together with the client, which goods will be re-used as such

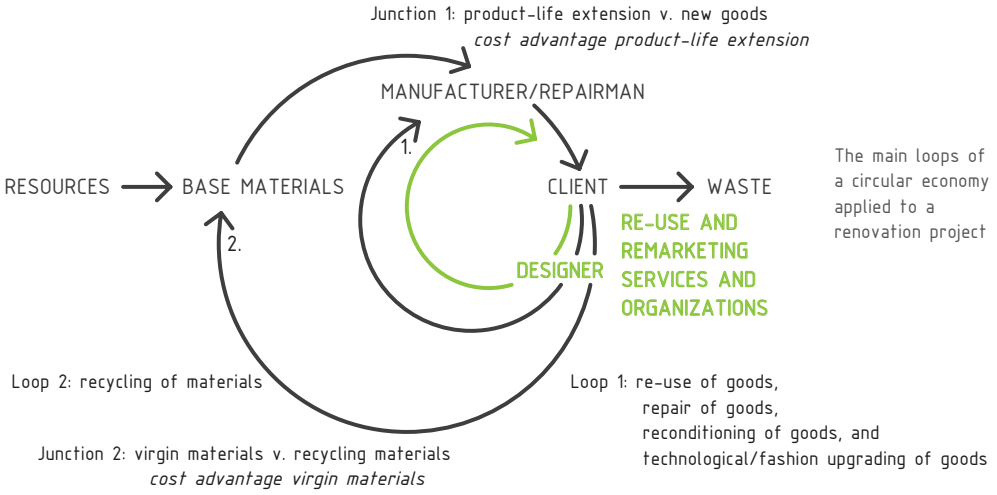


Figure 3. The Circular Economy applied to a renovation project

[59] Ibid., 3.

[60] Ibid., 4.

and what will be repaired, reconditioned, or upgraded. More so, the designer can influence the decisions of the client to recycle goods and materials that are no longer needed, instead of having them turned into waste. In addition to being part of the manufacturing network, the designer can also have a strong connection with re-use and remarketing services and organizations, sometimes being engaged with an organization through direct employment. Therefore, the designer, like the client, is involved in all the loops of the circular process of material flow. Furthermore, the designer can inform the client of the cost efficiency of recycling materials versus using virgin materials, and that of product-life extension services versus the purchasing of new goods. Consequently, the designer aids in connecting loops 1 and 2 of the circular model for economy (represented by junctions 1 and 2) to the manufacturer or repairman. Manufacturers can take back their own goods and offer product life extension services to their clients, but independent practitioners can fulfill this role when the manufacturer does not assume this responsibility.

In the following chapters of this written work, the author will further discuss the role of the different actors introduced in the circular model for economy as applied to a renovation project. This discussion is presented in specific cases. The author has interviewed professionals involved in renovation and manufacturing, which have been selected according to their relevance for this work. The cases are introduced according to the framework for this thesis. In Chapter 3, Design for maintenance and repair, the case of Nikari Oy, a furniture manufacturer, is presented, together with an interview with an interior architect. Following, the chapter considers resources available for maintenance and repair in the form of re-use and re-marketing organizations, as well as furniture restoration, exemplified in an interview with a furniture restorer. This discussion offers insight into the framework needed for design for maintenance and repair in products and interiors. Chapter 4, Renovation in practice, is introduced with the work of the author for Scandic Continental, followed by an avenue for business and the potential for renovation work on the market. This is presented in an interview with Martela Oy, a furniture manufacturer that offers renovation services to its clients, and in the example of Aalto University and its sustainable campus program. These examples are designed to illustrate the practical implementation of the circular model for economy, by introducing the various actors of the model. The discussion focuses on the manufacturer, the repairman, the client, re-use and remarketing services and organizations, with their individual roles, and on the designer as an important promoter and enforcer of sustainable thinking that ensures the circular flow of the model.

"Designers are needlessly constrained by the myth that everything they do has to be a unique and creative act. Rather than expect to design everything from scratch, we should search far and wide for tried-out-tested solutions that others have already created."[61]
John Tackara

In this chapter, the author examines the concept of design for maintenance and repair and how it can be applied to the practice of product and interior design. The chapter starts with a discussion about materials, where the focus is on wood and wood composites, and continues with an investigation into the properties of design for maintenance and repair and the characteristics of products designed according to this principle. This investigation gives the example of Nikari Oy, a Finnish furniture manufacturer, and an insight into the company's production methods. The chapter then continues with a section about the implications of design for maintenance and repair in the work of the interior designer, and an interview with Jorma Valkama, interior architect. The concluding section of this chapter analyses the product-maintenance infrastructure essential to the maintenance of furniture and interiors by discussing resources available for furniture maintenance and repair, together with an interview with Peter Eklund, furniture restorer.

A discussion on materials is included in this section of the thesis to illustrate some of the challenges surrounding design for maintenance and repair and the choices available to the designer. Wood is one of the most versatile materials available for construction and furniture manufacturing, a material that has been used for millennia due to its strength and natural beauty. It was chosen for insight in this section because of its wide use as a material for maintenance and repair and the controversies surrounding its use. While earlier in the thesis the problem of deforestation was discussed, wood still remains a favorite building material for valid reasons and the choices of the designer can have a deep effect on the environmental impact associated with its use.

Wood is a strong material, durable, light in weight, and easy to work. The different species of wood have different properties, but they all offer natural beauty and warmth to the touch. As opposed to other newer materials on the market, wood is alive and will transform during its lifetime through swelling and drying. These properties can be explored to bend the wood into the shape desired, but if wood is not properly maintained, they can lead to its destruction. Wood is treated for fungi, decay, and insect resistance before further processing;

[61] John Tackara, *In the Bubble: Designing in a Complex World*, (Cambridge: The MIT Press, 2006), 217.

however, its moisture content should be kept below 20% to avoid degradation.[62] Therefore, before processing wood, it is imperative that it be properly dried in a process that might require a couple of years.

Wood can easily be recycled multiple times, which makes it a great option for sustainable design, but there are a few things to keep in mind when choosing wood above other materials. Wood is not suitable for certain applications without moisture treatment with solutions that today are often toxic, and the manner in which lumber is cut will affect its strength and appearance. For example, quarter-sawn wood is more desirable than plain-sawn wood due to its even grain and less warping, but it also generates more waste when cutting.[63] Although recycling is preferred, new wood will be purchased in some instances, and the important aspect to keep in mind when buying is that the wood is sourced through sustainable forest management (it will be labeled), and that its origin is local.

Due to deforestation and other environmental as well as social issues associated with the production of lumber for manufacturing, different organizations have issued labeling for wood products. A few of these are FSC,[64] PEFC,[65] and Rainforest Alliance.[66] These organizations have as a goal the protection of forests by sustainable management, but also the rights of the workers that are treated with equity. While these resources are important to the interior designer, labeled wood is not always available. In such situations one can specify reclaimed wood or wood sourced from a trusted supplier. Such suppliers should be local and inquiries should be made about their harvesting and further processing practices.

Different wood composites have been developed by the industry in the effort of using wood more efficiently and processing wood waste. These include plywood, particleboard, medium density fiberboard (MDF), oriented strandboard (OSB), and waferboard. While these products are marketed as less susceptible to shrinking and swelling and require less labor to install, given that they come in finished panels,[67] they are also associated with environmental problems. The primary concern is the use of resins and glues in production, which often contain Formaldehyde – a known human carcinogen[68] – and usually lack product safety information. Although composites that make no use of toxic resins or glues are being developed, no wood composite can match the qualities and

[62] Francis D. K. Ching and Cassandra Adams, *Building Construction Illustrated* 3rd edition (New York: John Wiley and Sons, Inc., 2001), 12.11.
[63] Ibid., 12.11-12.12.
[64] https://us.fsc.org.
[65] http://www.pefc.org.
[66] http://www.rainforest-alliance.org.
[67] Ching and Adams, *Building Construction Illustrated*, 12.14.
[68] Lewis and Gertsakis, *Design + Environment*, 68.

durability of solid wood and is difficult to reuse or even recycle, making the use of composites problematic to the design for maintenance and repair.

A strategy developed in the effort to make full use of wood products and waste management is the principle of wood cascading, as presented by Karin Höglmeier, Gabriele Weber-Blaschke, and Klaus Richter in their recently published article about the potential for cascading of recovered wood from building deconstruction.[69] This principle entails the harvesting of solid wood and composite products from construction sites, analyzing their potential, and redistributing them for further processing instead of treating them as waste. Höglmeier et al. argue for the importance of harvesting wood products from building deconstruction and claim that 45% of the recovered wood "is potentially suitable for use as raw material for particle or fiberboard production, and 26% would even be applicable in a re-use scenario."[70] Further, they suggest that 27% of the recovered wood "could be utilized for high-quality secondary applications."[71] As reported by the authors in their case study for south-east Germany, solid wood can be reprocessed into other solid wood and-veneer products before further processing it into particle based and fiber based products, but the cascading can start at any level. At the end of their life cycle, wood based products can be turned into chemical raw materials before they become energy waste. As such, following

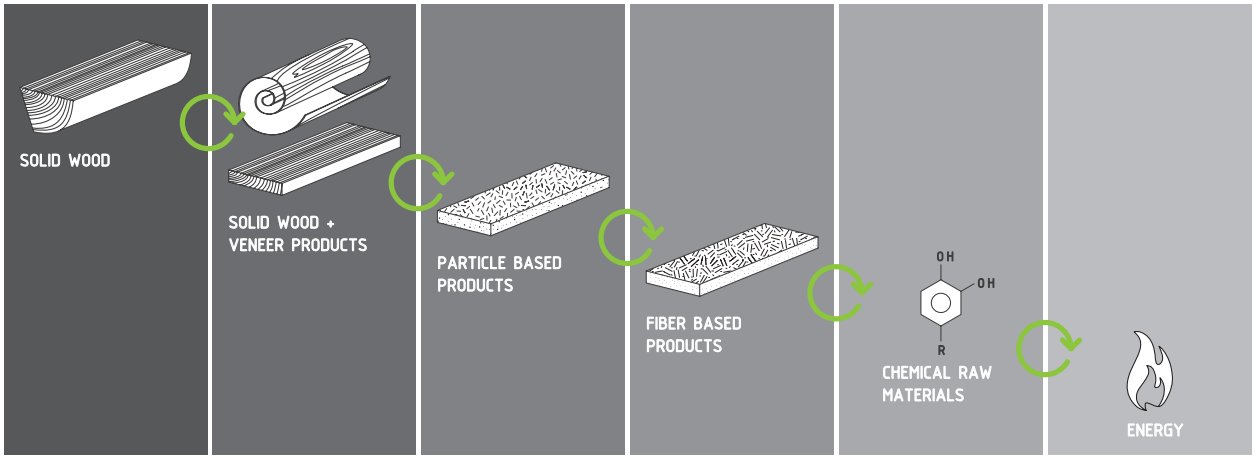


Figure 4. The Principle of Wood Cascading[72]

[69] Karin Höglmeier, Gabriele Weber-Blaschke and Klaus Richter, "Potentials for cascading of recovered wood from building deconstruction—A case study for south-east Germany," *Resources, Conservation and Recycling* 78, (2013): 81– 91. http://dx.doi.org/10.1016/j.resconrec.2013.07.004

[70] Ibid., 90.

[71] Ibid., 90.

[72] Figure 3 has been redrawn by the author, based on the figure provided by Höglmeier, Weber-Blaschke and Richter, in the work cited above.

the principle of wood cascading makes full use of wood based materials and reduces the need for harvesting new wood. This inherently requires that an infrastructure for manufacturing and remanufacturing of wood based products is in place and that legislation supports this recycling process, but it also entails changes in product and building design that allow for easy disassembly.

When quality is designed in a product and when a product is designed for maintenance and repair its appearance will undoubtedly be affected. The product will have to age gracefully and be characterized by timelessness.[73] The product should also be easy to disassemble and damaged parts should be repairable or recyclable. A good design is not only easy to take apart, it also requires less material to build. “Strength can be put only where it’s needed. If an object will tend to break in one inherently weaker place, then it would be wasteful to make it excessively strong in another place. Conversely, small changes in design can produce vastly better function.”[74] The individual parts will be made of single, not compound materials to ease recyclability. “Screws, glue and other mastic agents, as well as many welding and soldering methods, also defeat take-apart technology, whereas two-way fasteners, pop-in pop-out rivets, for instance, become necessities.”[75] Therefore, it is obvious that design for maintenance and repair will require careful planning from the beginning stages of design.

A comprehensive list of aspects to take in mind when designing for maintenance and repair can be found in Design + Environment: A global guide to Designing Greener Goods,[76] but some of these include:
• minimizing the number of separate components;
• designing interconnection points and joints so that they are easily accessible for the opening, loosening or separating of components by hand;
• designing the product as a series of easily accessible ‘blocks’ or modules;
• locating non-recyclable parts in one area that can be quickly removed and discarded;
• keeping assembly and disassembly methods to a minimum so as to improve efficiency.

When applying these principles to interior design, design for maintenance and repair would translate into the specification of products that follow the guidelines above in manufacturing, and also in taking these guidelines to an interiors level. This is understood as the specification of good quality materials that would keep a pleasant appearance even when worn, and that can be maintained and refinished with time instead of being replaced. It would also mean that the designer will consider the nature of the project, whether refurbishment or new construction, temporary or permanent, and address the requirements accordingly.[77] An important aspect to keep in mind will be to design with the unpredictable in

[73] Victor Papanek, *The Green Imperative: Ecology and Ethics in Design and Architecture*, London: Thames and Hudson, 1995, 47.
[74] Hawken, Lovins, and Lovins, *Natural Capitalism*, 74.
[75] Ibid., 58.
[76] Helen Lewis and John Gertsakis, *Design + Environment: A global guide to Designing Greener Goods* (Greenleaf Publishing, 2001), 155-156.
[77] Moxon, *Sustainability in Interior Design*, 90-91.

mind, understanding that the project will evolve with change of ownership and that renewable materials will ensure reuse or recyclability when the project is eventually demolished.

Inside the Nikari workshop in Fiskars

Outside the Nikari workshop in Fiskars

An example of quality in furniture and design for maintenance and repair, Nikari Oy[78] is a Finnish furniture manufacturing company based in Fiskars – one of the oldest manufacturing centers of Finland – and was founded by master cabinetmaker Kari Virtanen in 1967. Nikari produces high quality furniture for the domestic and contract markets using local certified wood and natural surface treatments, such as oils, waxes, and soaps. Having concentrated for decades on developing wooden furniture from the locally grown Finnish species of wood, the Nikari team of cabinetmakers and designers has great knowledge about furniture manufacturing in the pursuit of ecological values. The author has chosen to discuss the case of Nikari Oy in this chapter on Design for Maintenance and Repair because the author has found the company to fulfill all the criteria for quality and equity in manufacturing that has been discussed in this work.

While the company started small, it gradually developed from Kari Virtanen's experience as a university lecturer and teacher, and their furniture is now sold allover Finland, as well as on the international market. Recently, a Nikari workshop was opened in Kyoto, Japan, and the company is continuing to grow. While the small orders are all taken and produced by the Nikari cabinetmakers (the company now has 11 employees) when large orders are received, the production is outsourced to the subcontractors the company works with in Jurva, the center for highly skilled furniture manufacturing in Finland.

On the 11th of March 2014, the author met with Jenni Roininen and Johanna Vuorio from Nikari to discuss the process of manufacturing high quality furniture, some of the challenges of the company, and the company's values in promoting ecology and sustainability in the business. The meeting took place in Nikari's workshop in Fiskars, where the author could also observe part of the manufacturing process.

[78] http://www.nikari.fi.

At Nikari, locality is perceived as the only way of being productive, as Johanna Vuorio explained. Global companies can offer certifications for the materials they use, but working with the local Finnish industry will compensate when there is a common understanding – between customer and manufacturer – of the quality of materials and labor that comes from Finland. This allows for compromises at times, when the customer demands it, but usually the wood is sourced locally and supplied by a sawmill adjacent to the manufacturing workshop in Fiskars. When an order is received, the cabinetmaker responsible for the order will choose the suitable wood, process it and make the furniture piece. Therefore, each piece goes through the same hands from the start of the manufacturing process to the finish. This means that all of Nikari's cabinetmakers have the same set of skills, which they learn during their apprenticeship. While some of them naturally learn to master some skills more than others, they all share an understanding of the whole manufacturing process and the value of their work. This allowed for the opening of the Kyoto workshop in Japan, which is run by a Japanese cabinetmaker that trained in Fiskars. Due to the nature of wood and its sensitivity to climate, the best furniture will be manufactured and distributed locally, using materials that are sourced locally; this will ensure its quality preserves over time, as the wood ages.

Nikari furniture is designed for maintenance and repair. Most of the models are manufactured using a single material, wood. All the joinery and screws are also made of wood, and quality studies done for the company have shown that although no metal parts are used, the furniture can withstand the same wear and tear as that with metal joinery. Some of the pieces feature upholstery, however, and here the upholstered parts are attached with metal screws, that allow for easy removal and re-upholstery when necessary. The upholstery materials Nikari uses are certified wool and blended fabrics, felt, alcantara,[79] naturally handled leather, and reindeer leather. While the company will accept custom orders for finishes, they recommend the use of natural oils, waxes, and soaps. Not only are these finishes free from toxic chemicals, they will also protect the wood from staining and will highlight its natural beauty. As Jenni Roininen explained, because wood is a living material, it will remove stains on its own when the finish allows it. This will not be possible when wood is painted, for example. But most importantly, the Nikari furniture is built to last, as quality is tested and developed constantly.

[79] http://www.alcantara.com/#/en/home.

Photo: Chikako Harada

Photo: Chikako Harada

Examples of Nikari furniture, including products from the 12 Designs for Nature Series

The Nikari team carefully searches for quality in materials, which will ensure the long life cycle of their furniture; nevertheless, they also offer renovation and maintenance services to their clients, which can be included in the price of each order. They recommend that each furniture piece be refinished after the first or the second year of use, as this will prolong its life. Since wooden products are easy to recycle and are manufactured from a renewable material, damaged parts can be replaced when needed, and when materials are disposed of, they can be burned. MDF or particleboard, on the other hand, are very difficult to recycle and cannot be used in the manufacturing of durable structures. Therefore, these materials are not used in Nikari furniture, but are only specified for custom orders, which are then manufactured by subcontractors. All the tree species the company uses are cultivated in accordance with sustainable forestry policies, and these include birch, oak, ash, elm, black alder, spruce, and pine, all of which grow in Finland.

When examining the quality of the Nikari furniture and visiting their workshop, it is difficult not to notice the respect each employee has for the company values and the furniture they produce. Everyone there has an understanding of the process of building a long lasting product, as the company fosters the atmosphere of appreciation for locality and the source of each material they use. Further, the company provides a safe working environment to all of their employees, by aiming for the use of natural materials in a toxic-free workshop. It does not come as a surprise then, that the company has seen growth in the last few years, as they work on educating their clients about their products and maintenance over time. It is important to further note that instead of focusing solely on the contract market, as many furniture-manufacturing companies do, Nikari also sells to individuals on the domestic market. Therefore, their products and philosophy have been made available to the regular customer, which contributes to the education of these clients about the importance of quality and ecology in products. As Jenni Roininen explained, the problem of producing high quality furniture does not lie in the amount of orders, as these can be processed; the problem lies in making these products available by managing a large amount of stock, something a small company has difficulties overcoming. However, while some companies concentrate solely on exporting their products and detaching themselves from the manufacturing of their own goods, Nikari chooses to focus on exporting their values and educating their employees. As with the opening of the Kyoto workshop, and perhaps others to come, skillful people in different places will contribute to establishing their philosophy globally.

"As socially and morally involved designers, we must address ourselves to the needs of a world with its back to the wall while the hands on the clock point perpetually to one minute before twelve."[80]
Victor Papanek

For the professional with an interest in design for maintenance and repair, it is crucial to understand that the pattern of his/her work will change. That should be understandable, since the pattern we follow at the moment was developed by a business with different ideals. Stuart Walker emphasizes that "implementing sustainable principles within [the] existing norms of design and production is highly problematic because the values and priorities are, in many respects, so fundamentally different."[81] How the new pattern for work will look will depend on the nature of the project, but some ideas will be discussed in the following paragraphs.

As is the situation in the interior design business today, whether with new construction or renovation, each designer might have his/her own approach to a project, but the patterns will most likely respect the same basic stages, those of an architectural project: schematic design, design development, construction documents, bidding and negotiations, and construction administration.[82] The majority of the work time for each project is spent in the office, and there is relatively little contact with the owner or with the space to be designed. More so, the designer's creativity is often reduced to the choice between the different products available on the market. With developments in software for computer modeling and the Internet, although very useful in interior design work, it is now possible for design firms to work on projects all over the world without necessarily changing location and sometimes with meeting their clients only virtually. This practice has not only disconnected the designer from the tangible results of his/her work, but it has led to the development of a universal trend style that sells everywhere.

In Cack-handed Design, Stuart Walker makes an analysis of the current industrial design products available on the market and the manner in which they are designed, analysis that could very well illustrate the quality of the interiors designed with the same products. According to him, the aesthetic qualities of these designs are "culturally neutral or bland; cold or remote; curved, rounded and smooth; fashionable or showy; and complete and inviolable."[83] Indeed, one can merely pick up an

[80] Papanek, preface to *Design for the Real World*, xxvi.
[81] Stuart Walker, "Cack-handed Design: Design-centered approaches to Process and Product for Sustainability, *The Design Journal* 10, no. 3 (2007): 29.
[82] American Institute of Architects, "Defining the Architect's Basic Services," *AIA Best Practices,* July 2007, http://www.aia.org/aiaucmp/groups/secure/documents/pdf/aiap026834.pdf.

interior design/architecture magazine or search the web, and the images found would fit Walker's description perfectly.

Walker offers a solution to the design crisis, a practice he entitles "cack-handed design" (cack-handed, an informal British adjective meaning inept, or clumsy), a design characterized by informality, self-expression, self-determination and self-reliance.[84] Some of the methods used in this design practice are the result of improvisation, spontaneity and chance, and are naturally characterized by the use of recycled materials and products. As opposed to the contemporary design practice, this type of design embraces the unknown, and visually allows for a project to evolve by inviting the participation of the users to improve and enhance its quality throughout time. In other words, each completed project has an unfinished nature, in the sense that bringing in new elements will not damage its aesthetic quality. While the name "cack-handed" gives this practice a distinctly different identity from others, its methods are not new, but fall consistently into agreement with those used in renovation. Therefore, what Stuart Walker would call "cack-handed" industrial design, could, when applied to interiors, very well identify with a successful and carefully planned interior design renovation project.

[83] Walker, "Cack-handed Design," 30.
[84] Ibid., 31.

On the 12th of March, 2014, the author met with Jorma Valkama, interior architect, to discuss his work experience in the field of renovation and his professional approach to a renovation project. Jorma graduated in 1991 with a degree in spatial and furniture design from the University of Art and Design in Helsinki (Taik), now Aalto University School of Arts, Design and Architecture, with a thesis on the subject of renovation. He studied the subject on his own due to personal interest and having been inspired by his wife's career as a restoration painter. Since his graduation, Jorma has been working in the field of interior design, and now has his own practice. Some of the renovation/restoration work that Jorma has completed includes the Bishop's house, the Townhall and the Home of Runeberg, all located in Porvoo, and private family mansions.

As working material for this thesis, the author's discussion with Jorma Valkama attempts to define a pattern of work for the interior designer when approaching a renovation project, which will tie in to the issues already discussed in the previous section of this chapter. Jorma's career has taken him a step even further, from renovation to historical restoration, but the pattern of work is similar. When beginning a project, Jorma will explore the space and review any background material that has been written about the building. He searches for newspaper articles, pictures, other written documents, and technical drawings that can tell the history of the space. This helps him understand the changes that have taken place over the years, while he compares the new space with its past appearance. As he sometimes receives the task to restore the original interior of a 100 years old building to a functioning space, this is done by searching for ways to optimize the layers of the building to modern standards, such as electrical, ventilation, and plumbing. He then begins to make the drawings, which sometimes include furniture drawings, as he tries to appreciate the original. Everything will be modernized to some degree, but as he explained, the interaction of the original layer of the interior with the modern will be the basis of measuring the quality of one's profession. While part of a team, Jorma works with architects, electricians, engineers, and carpenters, as well as conservators and museum personnel when the building is of great historical value. Together the professionals will study the best strategy to fulfill the client's idea of the building, and will address the task accordingly. When working with restoration, it is important to retain the original as much as possible when it is valuable, but because conservation work can be very expensive, compromises will be made at times. Whereas each

project has its way of deciding how the work will evolve, the most valuable part will usually be preserved.

When discussing about value in a building, this is measured by quality standards – the higher the quality, the higher the value. Jorma explained that it is the valuable materials that last through the years, and during his work experience in Finland, he has observed wood to be one of the most valuable materials. Therefore, when selecting materials for construction, he will specify mostly wood, with some metal parts, but usually the building will have a say on how to build and what materials to use. A successful renovation project will last 50 years, keeping in mind that some components will naturally go old (such as pertaining to electricity for example) and given that the building will be properly maintained on a yearly basis.

Challenges with renovation projects arise when a building is to change its original function, an old industrial building to loft apartments, for example. Keeping the atmosphere alive although the original function has disappeared is the most difficult goal to achieve, yet this is the beauty of working in the renovation field – it is never an easy task, since one will face the unpredictable. There will always be contradictions between the functioning of an old building and that of a new one because of the differences in planning. Modernizing will always be difficult when all the modern standards are desired. A visible example is in the differences of occupancy, when an older building will not allow for the same amount of occupants as a new building.

From the interview with Jorma Valkama it is evident that one of the most important aspects when completing a renovation project is to search for quality in materials and furniture. When these elements of an interior are designed for maintenance and repair, with timelessness and graceful aging in mind, then the project will last for many generations and become valuable. It is also important that all the actors involved in a project have a common understanding of what the outcome should be and that they cooperate towards the best possible result. An interior space or a building can change function and still keep its beauty and original character when it is designed according to these principles.

Resources available for furniture maintenance and repair include re-use and re-marketing organizations and product life extension services. Re-use and re-marketing organizations have a significant contribution to the diversion of waste from the landfill and to natural resource efficiency. For example, it was estimated that in the UK, re-use organizations sold 85% of their items back to the community, recycling another 6%, and disposing the rest 8% of their supply.[85] These resources for furniture maintenance and repair are important to the interior designer that is looking for alternative sources for materials.

Re-use organizations[86] gather donated items from the community and resell them at a much lower price than new items. While some of these organizations have as primary purpose the relief of poverty, they also hire the disadvantaged and long term unemployed, sometimes providing their employees with further education. These organizations are privately owned and sometimes operate with the help of volunteers. Depending on the size of their premises, they sometimes offer product life extension services to their customers. Antique stores could also fall into the category of re-use organizations, however, their prices are much higher, as they provide furniture and other items to an exclusive clientele that is mostly concerned with finding good quality, sometimes collectable items.

Re-marketing organizations can be linked to certain stores, such as outlets, or they can be independent, gathering their products from a variety of suppliers. The items they sell are usually new, past season products that have been taken out of the stores. The products sold by re-marketing organizations are usually more expensive than those re-used, but their prices are significantly lower than in the regular stores.

Some examples of Finnish furniture manufacturers that have opened their own outlet stores are Martela[87] and Artek.[88] Both manufactures take back their own products and those of other manufacturers, refurbish the items and sell them at a lower price. Opening the outlets has been part of the two brands' environmental strategy and their effort to raise consumer awareness. In the case of Artek, a manufacturer of iconic designer furniture, the opening of their 2nd Cycle shop has also contributed to the education of clients about the quality of their furniture and has provided an opportunity to show the beauty of their products through everyday use.

Perhaps the largest re-use organization in Finland is Kierrätyskeskus,[89]

[85] A. Curran and I. D. Williams, "The role of furniture and appliance re-use organisations in England and Wales," Resources, *Conservation and Recycling* 54 (2010): 703.

[86] Ibid., 692.
[87] http://martelaoutlet.fi.
[88] http://2ndcycle.artek.fi.
[89] http://www.kierratyskeskus.fi.

or Recycling Center, which gathers donated items, including furniture and other house goods, for redistribution. In the capital region, the organization operates five shops and contributes to the strengthening of the community. A non-profit organization, Kierrätyskeskus provides educational programs and events that teach the importance of material recycling and waste aversion. As part of their branding strategy, the company has developed a concept for reuse and recycling of furniture and textile materials, such as clothing, that gathers donated items for refurbishment or as material for new products. These products are sold under the Kierrätyskeskus brand, Plan B.[90]

Some private practitioners that operate independently and have their own workshops also offer product life extension services. The services they provide include furniture restoration, re-upholstery, and painting, and they can present a customer with reliable, good quality renovation. The work of these furniture restorers is time consuming and valuable, most of them having developed their skills for many years, but it will provide the customer with a viable alternative to the disposal of their furniture. Not all furniture pieces can be restored, since this largely depends on the degree of damage and materials used in their making, but a quality piece is usually worth the effort for prolonging its life.

[90] http://www.kierratyskeskus.fi/in_english/plan_b.

Peter Eklund's workshop in Hyvinkää

On September 26, 2012 the author had the privilege of visiting the workshop of Peter Eklund,[91] a wood furniture restorer working in Hyvinkää, Finland. He started his business in 1986, after completing his education in Helsinki and England. His clients are private individuals, and he receives most of his new commissions by word of mouth or by collaboration with other restorers who only work with reupholstering. During the author's visit to his workshop, Peter took the time to answer some questions regarding his business and furniture restoration in general.

Peter only works with antique pieces, usually made of solid wood, with few items in plywood. He mentioned that quality wood furniture should last forever if well taken care of. The pieces can be damaged by air quality and fire, yet chairs that are 300-400 years old can still be used every day if carefully maintained and restored properly when needed. Thus, furniture can keep up to two generations until further restoration is required.

The modern machinery in Peter's workshop offers the needed protection against dust, but most of the techniques he uses are the same as those used by furniture restorers a hundred years ago – sharp manual tools and natural substances for treating the wood. These substances are difficult to find today, however, and it usually takes years to find good ones, as they require experimenting before they can be used on client furniture. Experiments are carried out on pieces of wood taken from damaged furniture bought on occasion, with the purpose of replacing missing pieces in items to be restored. Everything is kept for future use when disassembled, from wood to nails, to hinges and other details. Nothing is wasted this way, as destroyed old pieces serve as recycling material for repairing furniture made of the same wood type and of comparable age. The scrap wood and other supplies are carefully kept in the workshop, and the load is renewed occasionally. As for the tools, Peter prefers the old ones because they are of better quality. He

[91] http://mobelrestaurerare.com.

explained that when they were made, it was quality that was sought after, not cheap materials or cheap labor. Also, there was more knowledge of manufacturing for performance, as those who made the tools were often those who required them.

Detail of spare nails from the workshop

During the discussion, the author mentioned a wish to hear his opinion regarding differences between the furniture produced today and that of the past, given Peter's many years in the business. He mentioned that an important difference is that furniture produced in the past was made with the purpose to last for generations, a purpose which is not shared by the manufacturers of today. Another difference lies in the comfort – old design is much more ergonomic – and the specific purpose for use. Furniture in Finland used to be produced out of solid wood, which is easy to repair, whereas today everything but solid wood is available, such as particleboard, MDF, plastics, or metal.

According to Peter, the furniture produced today can be of quality, if made custom. "Just designed and produced" furniture is not made for generations; it looks good, but that is all. He mentioned that when particleboard was introduced as a material in Finland, during the 80s and 90s, bad furniture began to be produced on a large scale. Most of Peter's clients are in their 50s and 60s and having gone through plenty of bad furniture during their lifetime, they are now gladly returning to fine, good quality furniture which they purchase and have repaired.

Before ending the discussion, Peter shared some of the difficulties of the business and reasons for slower progress in the repair of certain items. A problem with the work of restoration is that of surface treatment, as one can never know what the previous users of the piece have put on it and what reaction the wood will have to new treatment – a very good example is silicone spray, which when used on wood destroys its surface. This can sometimes make pricing difficult because testing is necessary ahead of final treatment. The natural materials for resurfacing or binding can also have their downside, such as the glue made of fish bones, a favorite with wood insects. The cold weather in Finnish winter serves a good purpose here, because after being kept outside for the night in the winter, furniture is guaranteed to be insect-free. Joints assembled with animal glue can

easily be opened, and damaged pieces can be replaced with new ones made out of the scrap wood in his workshop.

All in all, the visit to Peter Eklund's workshop is of great value to the coherency of this written work. Although there are some difficulties in the business of wood restoration and renewal, one can easily conclude that the practice is sustainable. Working with existing items, recycling everything possible and using only natural materials are examples of sound work techniques. Not only are little raw materials extracted, but good quality furniture is ensured a lifetime, and customers can enjoy the beauty and comfort of well-designed pieces with history.

Detail of spare keys from the workshop

Scrap wood from the workshop

The chapter on renovation in practice gives specific examples of work completed in the field of interior design renovation. This begins with a presentation of a project completed by the author for Scandic Continental Helsinki that will follow all the different stages of the interior renovation of five hotel rooms: research and design, project presentation, and construction. The section evaluating the project concludes with the author's reflections on the whole process and the results. This discussion is followed by an insight into avenues for business and current developments on the market. Here the author gives the example of Martela Oy, a Finnish furniture manufacturer, and the services the company offers in the field of renovation, concluding with the case of Aalto University and its promising example of leadership in a sustainable campus and business initiative.


Photo: Patrik Rastenberger

Room 630 Detail

An example of a completed renovation project is analyzed in the following section, a project for Scandic[92] Continental Helsinki[93] done in collaboration with Vallila Interior Ab.[94] This project comprised the design and renovation of five hotel rooms and was initiated by the hotel management in the effort to bring these neglected spaces back to life. The design process began by analyzing the potential of each room and then finding solutions for their renewal, solutions that would fit within a minimal budget of 3,500 euros and that could be completed in as short a time as possible. Needless to say, the expectations for the design were to exceed the imaginable.

[92] http://www.scandichotels.com.
[93] The hotel has since undergone thorough renovation, and the author's project has been demolished.
[94] http://www.vallilainterior.fi/fi.

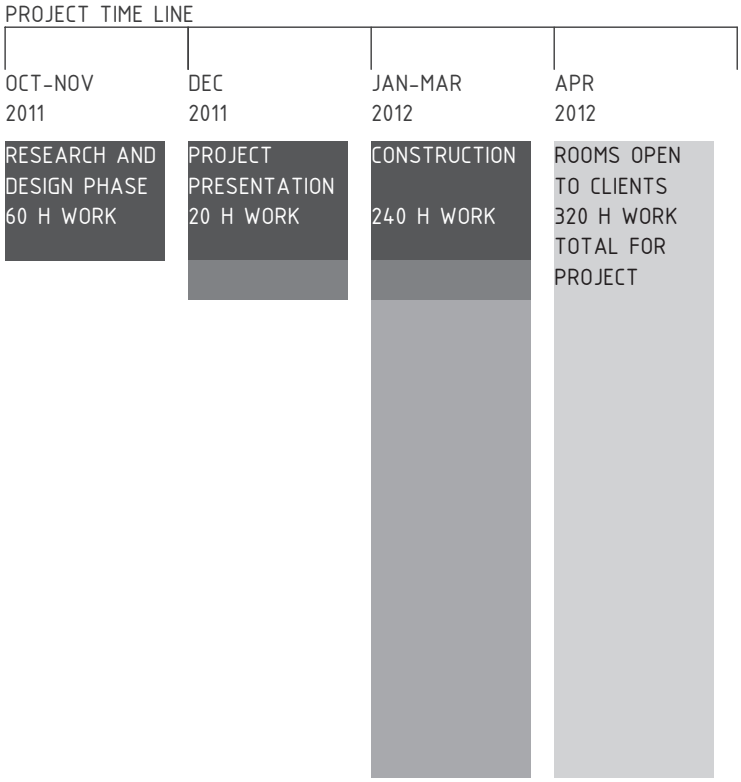


Figure 5. Project time line

Provided with the framework given in the first client meeting, the designer started thinking of strategies to tackle the challenging project ahead and began forming a design concept that would conform to the budget and time limitations that had been given. This concept evolved with time, and had a note of ambiguity until all its elements came together and the rooms were completed. Given the fact that it was the first project the author completed as an independent designer, it immersed her in a new experience that promised to bring exciting opportunities to learn and a few difficult tasks to overcome.

While having done research for a previous project, the designer had gathered a few books featuring awarded photographs of Finnish landscape, published by the Finnish Association for Landscape Photography. The photos became the inspiration for the design concept, which entailed the rendition of the atmosphere captured in the images. The intention was to break away from the neutral or bland designs so prominent on the hotel and hospitality markets and to challenge the staff to accept something out of the ordinary. The hotel rooms to be designed were to express an intimate and balanced atmosphere, so prominent in nature. As a result of this endeavor, five photos were chosen with the help of the housekeeping manager of the hotel, selected from a variety of landscapes found in different parts of the Finnish countryside at different times of the year. Each room was given a corresponding image that served as background for the color palette. The images were assigned according to the characteristics of the given interior that they were to serve, in the effort to match them with existing elements.

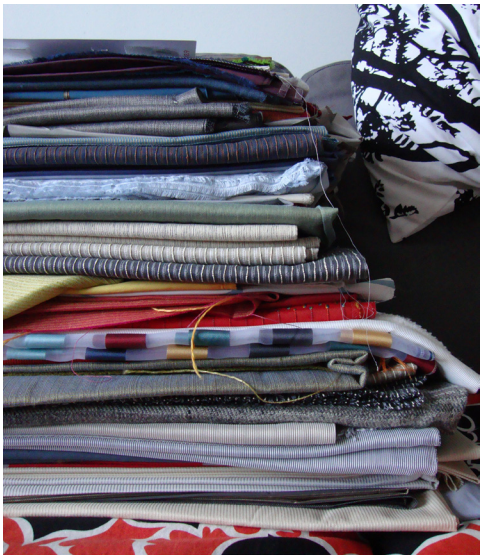
During the process of selecting color palettes, the designer gathered photographs of hotels and private homes to research existing interiors and to provide the client with an image of what

the renovation project would look like when completed. The research translated into inspiration boards with images, which were later discussed in a client meeting, and analyzed for suitable solutions in the case of the renovation project. Interesting ideas were marked and taken into consideration during the design process.

Aside from researching existing projects, significant time was spent inside each of the hotel rooms to be designed, measuring and studying the spaces, and trying to find solutions for the renovation. The result of the study was summarized, and a list of changes to be made was written for each room in particular. Subsequently, the designer obtained access to the storage of the hotel with the aim of finding suitable furniture for the project, items that could be used as such or restored. Pieces were selected and best matched to each room accordingly. At the end of this process, the designer gained a thorough understanding of the qualities and imperfections of each space, and a general perspective for the application of her design concept.

Having already had a framework for each of the five spaces, the designer began searching for suitable materials and scheduled an appointment with Vallila Interior Ab to visit their showroom and look for inspiration. During the meeting, she searched for fabrics for re-upholstery, discussed their pricing for materials, and asked for the contact information of professional upholsterers and furniture restorers they work with.

Project Research

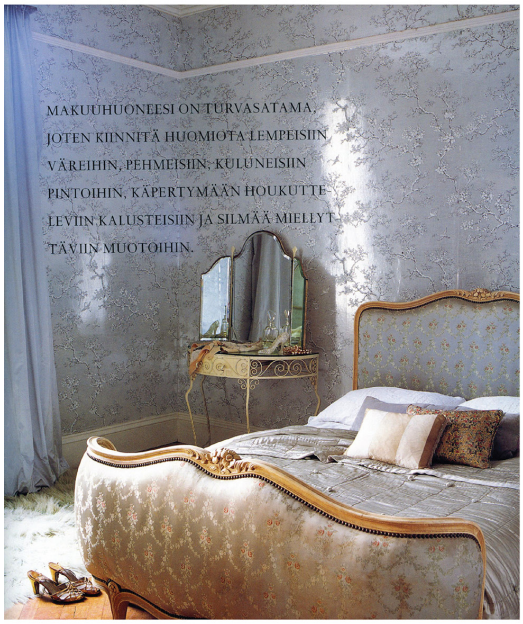


Sorting through abrics from Vallila

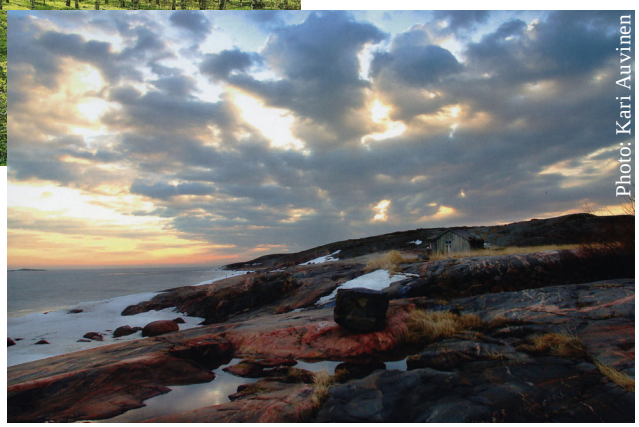
Project Research

While this initial meeting had a commercial aspect, as the design concept developed the designer established a partnership with Vallila Interior Ab and they agreed to sponsor the project with materials and to also provide labor assistance, therefore greatly contributing to the success of the renovation.

The designer's vision for Scandic Continental began to be shaped by some of its history as a place of different eras and styles. This was clearly reflected in the traces left by renovation processes completed throughout the years and by colors and elements that sometimes matched solely in their sense of being out of place. This vision and own research shaped the design concept, which was to bring elements of the beautiful Finnish nature indoors, and to create an atmosphere of relaxation for the clients of the hotel. This was to be achieved within the boundaries set by the hotel, and those set by the designer. While they had a very small budget and were pressed by time, the designer wanted to work with the existing and transform each of the spaces in a process of renovation and renewal. Although at first glance the boundaries appeared limiting, they turned from restrictions to opportunities for creativity, as the solutions will show in the construction phase of the project.



Project Research



Color palette and inspiration for the five rooms

Before agreeing on a start date for the renovation, the responsibility of the designer was to make a budget and to present her ideas in a visual manner for project approval. This presentation naturally required some kind of renderings of how the spaces would look like, and given the short time frame for preparation, the designer focused on a single room for 3-D modeling. The other four were presented using sketches. Professional furniture restorers and upholsterers were contacted for pricing offers, but the exact materials to be used in the renovation still remained an uncertainty. Only the general scheme was set. Therefore, the budget for each room was made while taking some potential costs into account.

In the project presentation meeting with the hotel and housekeeping managers, the designer discussed the furniture chosen for restoration and her thoughts for what needed to be done in each of the spaces. Given the condition of the carpet in two of the rooms, it had to be removed, and the option agreed on was to replace it with wood laminate. Instead of new paint on all the walls, the suggestion was to bring some accents only, and wash the other walls to restore them to a good condition. New curtains were needed in four of the rooms, and given the restricted budget, the options available were either to dye them, or to use applique. All the rooms were to be properly and thoroughly cleaned, all textiles washed, and some pieces of furniture to be removed in the effort of avoiding clutter. The ideas of the designer were accepted, and an agreement was reached for the construction to start in January 2012.

Room 622 visual concept

Now that the project had been approved and construction was ready to begin, asking for sponsorship with materials became more viable. Since the designer had already contacted Vallila Interior Ab and they were aware of the project, the hotel manager asked if they would agree on sponsoring the project with materials. The request was accepted, and Vallila committed to sponsoring with fabrics, paint, wallpaper, and sewing labor where needed.

Given the new collaboration with Vallila, the designer visited their office again, this time in search for materials. It was thrilling to discover that they had a large storage of out-of-season products that the designer obtained permission to look through and choose what she wanted. Therefore, fabrics were selected, what needed to be sewn was ordered, and a wallpaper for one of the rooms was decided upon. The paint was ordered later, when the estimates were made and the colors were chosen.

In the meanwhile, the construction started, in all the five rooms simultaneously. The designer began, together with a few of the hotel staff, by taking some of the existing furniture out from each room, and removing the damaged carpet. The rooms were in need of in-depth cleaning, which was performed simultaneously, as the new elements were built and brought in. While the designer herself did most of the physical labor for the renovation, during the final stages of the construction she received significant help from workers in the hotel. A furniture re-upholsterer renovated four of the chairs, and a person was hired to install new baseboards in one of the rooms where the carpet was replaced by wood laminate. The construction was completed in a time period of approximately six weeks. The criteria for material selection entailed that as little as possible should be purchased new, however, in the case of paint and wood laminate there was no other choice; in this situation the designer specified eco-labeled paint and flooring.

At the completion of the project, the designer wrote a story for each of the five spaces, explaining her intentions and the inspiration for the atmosphere in the room. These stories were printed, framed, and placed in their corresponding place. The hotel manager asked for permission from the authors to exhibit the inspirational images, and these were added together with the stories. The intention behind this part of the project was to offer the customers a glimpse of what was prepared for them.

A questionnaire was also added to each room, which the customers could fill out and express their satisfaction with the design, offering suggestions for improvement. The responses recorded were intended to serve as guidelines to the hotel managers in planning the renovation of the whole building,

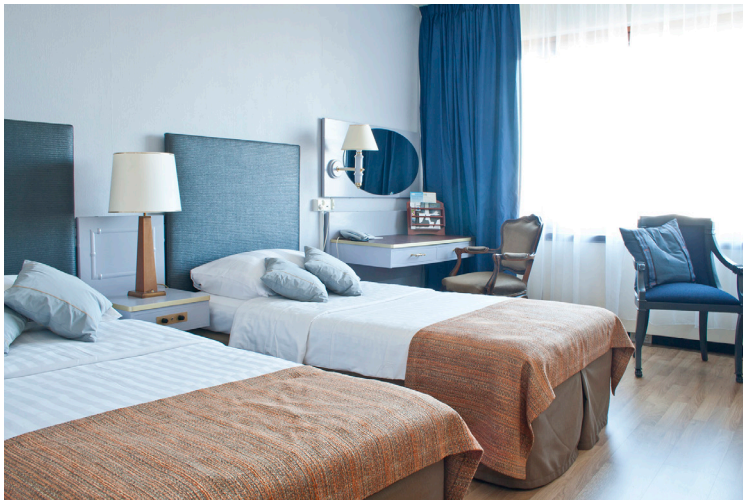
which was scheduled to start in the near future. To the great disappointment of the designer, although the questionnaire had been planned as an essential part of the project, the customers of the hotel did not respond to the efforts of gathering feedback. Perhaps due to the small number of rooms and also to little promotion and support from the hotel staff, only very few questionnaires were returned during a whole year period. While this information should have been added to the research part of the project, there is very little to mention and this portion was removed from this written work.

Removing old paint from a table

Reupholstering a chair

Room 638 in construction

Room 638 carpet replacement



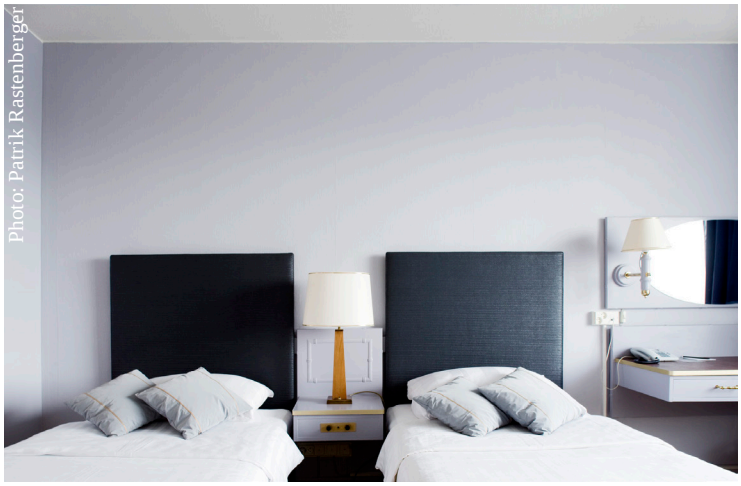


Photo: Patrik Rastenberger

Room 622 after renovation
Photos: Anja-Lisa Hirscher, unless otherwise stated

Room 622 before renovation
Photos: Anja-Lisa Hirscher

This room had been a smoking room for many years, and the space was cluttered with large, mismatched furniture. It was obvious that the big dresser had to be removed, and the damaged carpet replaced. The designer chose to paint two of the walls, while the remaining walls were washed. The fiberboard furniture (desk, night stand, and suitcase support) and the baseboard were also painted, as no other alternative was viable, in a slightly darker shade than the walls. The carpet from the suitcase support was removed and covered with a thin MDF board – the only material that the designer found suitable for this purpose, which could serve well as a temporary repair. New headboards were brought in, salvaged from the hotel storage, together with three chairs and a small table. One of the chairs was in perfect condition and could be used as such, while the other two were repainted and reupholstered. The table had to be painted as well, since the legs were slightly damaged by moisture. The Vallila staff sewed new draperies (blackout fabric and the shear curtains were reused in every room), together with bed skirts and bed covers. The designer sewed cushions for the beds and chairs, and switched the artwork to something that would match the color palette of the room. After the work was completed, the hotel staff was so pleased that they decided to make the room nonsmoking, something taken as a sign of project success.

In terms of difficulty, perhaps this room was the most challenging of all. Most of the furniture was in good condition, but there was no room in the budget to replace the carpet, which had been applied in two sections and had eroded at the seams. A solution would have been to remove one of the sections and turn it around, but that was not possible either. The carpet had been mounted using glue on a hemp netting, which proved very difficult to remove without tearing chunks of hemp that stuck either to the carpet, or to the concrete floor. This room had been renovated at some point, and the carpet was obviously newer and in much better condition than that in room 622, but the mounting method appeared to have been less time consuming and most likely cheaper. It was obvious that the ease of eventual removal and replacement had not been taken into account. So the carpet had to stay, and it became the designer's biggest disappointment with the final design. In this room, new chairs and a table were brought in, with one chair and the table having been repainted. Textiles were also changed, namely the curtains, bed skirt and bed cover, as in room 622, all sewn by Vallila Interior staff. The designer reupholstered the headboard above the bed, sewed cushions, made new artwork, and switched the lamps with those from another room, so that they would match in style. After completing the renovation, the atmosphere in the room had greatly improved, but the slightly damaged carpet would have given any customer the impression that not much had been done at all.

Room 628 before renovation
Photos: Anja-Lisa Hirscher

Room 628 after renovation
Photos: Anja-Lisa Hirscher

Room 630 after renovation
Photos: Anja-Lisa Hirscher, unless otherwise stated

Room 630 before renovation
Photos: Anja-Lisa Hirscher

This room was in a fairly good condition when the renovation began, as opposed to the other four. The carpet had been well preserved, and the furniture was in good shape, but there were things to improve. Two armchairs were brought in from the hotel lobby, which were washed and utilized to replace the old ones in the room. The lamps were switched with those from another room to match the new design, the table was replaced, and also the desk chair, which was repainted. Wallpaper was applied to one of the walls; the other walls were washed, and the baseboard was painted in the same color as the desk chair. New draperies and a bed skirt were brought in, sewn at Vallila. The new shear curtains were from storage, and together with hotel staff the designer sewed pillows and a bed cover. The designer also reupholstered the headboard in a fabric that would match the color scheme of the room. Additionally, the existing artwork was replaced with something obtained from storage. Envisioned as a calm and romantic retreat, the atmosphere in this room was achieved when the renovation was completed.

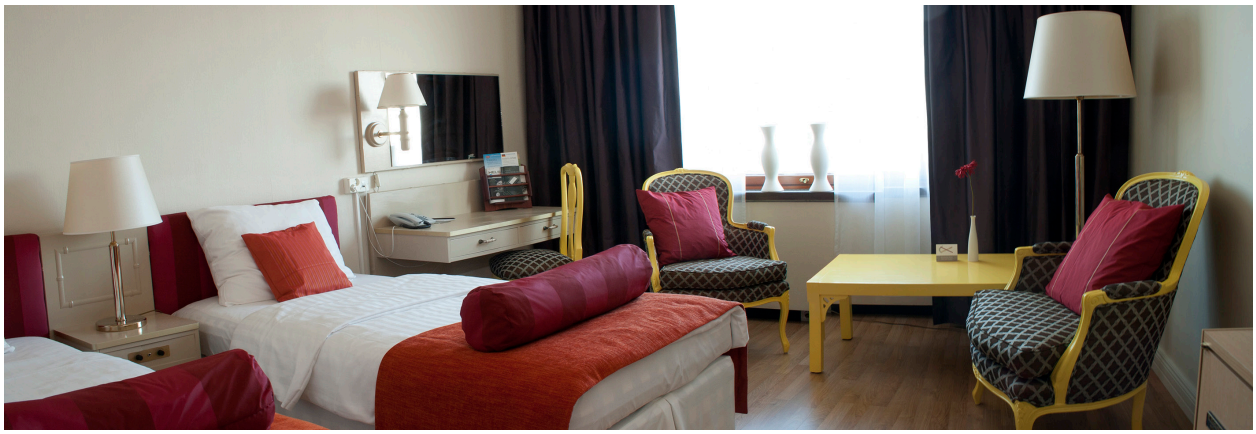
Room 636 before renovation
Photos: Anja-Lisa Hirscher

As the previous, this room was mostly in good condition, with the carpet intact. However, different items had been brought in to replace broken ones, and the furniture did not match. These items were taken out, and new ones were brought in as follows: two armchairs from storage, which had been professionally reupholstered, a table from storage that was repainted, and a beautiful rococo chair, which the designer repainted and reupholstered. The baseboards of the walls were also painted, in the same green shade as the furniture. The draperies and the curtains were reclaimed, and hung after cleaning. Staff from Vallila Interior sewed a bed skirt for this room, while the designer sewed the cushions, the bed cover, and re-upholstered the headboard. Above the bed, a curtain rod was installed for the newly sewn curtains, a delicate detail planned for this room. A beautiful print of a painting by Mark Rothko replaced the old artwork, and the room was ready.

Room 636 after renovation
Photos: Anja-Lisa Hirscher, unless otherwise stated


Room 638 before renovation
Photos: Anja-Lisa Hirscher

The final room to record, this became the author's favorite design. As with room 622, 638 was in desperate need of renovation. The carpet was very damaged and the whole space was cluttered with mismatched furniture. This old furniture was taken out, and after the carpet was removed we installed wood laminate flooring. The baseboards were missing entirely from the room, as pieces of carpet had been used instead, that were heavily glued to the wall. After removing them it was obvious that baseboards also had to be purchased and installed. A professional was brought in for this purpose, and he completed the work in a couple of hours. The suitcase wall support was covered in carpet and the same treatment was applied to the piece as to the one from room 622. After an upgrade, the support was instead to be used for the television. Two armchairs and a new desk chair taken from the hotel storage replaced the old ones, and after the upholstery was washed, the wood frame was painted in a different color. A new table, that was restored, replaced the existing one. The remaining fiberboard furniture was painted in a muted color to match with the walls, and the headboards above the beds were upholstered. Vallila Interior sewed bed skirts, bed covers, and draperies for this room. The new shear curtains were again from storage, and with the help of hotel staff the designer sewed new pillows for the beds and chairs. After making new artwork for the wall, the room was complete.



Room 638 after renovation
Photos: Anja-Lisa Hirscher,
unless otherwise stated

This experience was much more rewarding for the designer than any other project she had previously been involved in. The learning by means of practical construction and renovation work during the project exposed her to unprecedented opportunities to gain knowledge about the process of building an interior in reality. The designer was able to apply theoretical knowledge into practice, such as in the process of repainting, re-upholstery and furniture repair. She used her vision to give potential to forgotten spaces, and her physical strength to lift, move, build and bring this vision to reality. Further, the designer realized that computer renderings, as detailed as they can be, can never offer the experience of "breathing" the three-dimensionality of a space, and that spending as much time as possible in a space rewards a designer with the prospects of finding the most suitable solutions for a project.

The designer estimates that more than 90% of the time she spent working on the project was inside the hotel, whether in the rooms or in the storage, and this enabled her to better understand and to grasp more easily the three-dimensionality of the design. Additionally, this enabled her to indirectly establish a relationship with the future users of the spaces, through planning and living within the space during construction. As a consequence, the designer believes she was able to control the process of designing from a much better position versus working from the office, as she had done previously. A direct outcome was to notice the "imperfections" of each room in particular and to adapt the design accordingly. More details could be taken into consideration and addressed, while the vision of the whole work moving forward remained a constant. The abstractness of the concept became clearer and clearer with each detail completed, until the rooms envisioned became reality and the work ended.

During the project, the designer encountered moments of conflict as to what materials would be used in the space. While the restored furniture was given a new life and the pieces were to be auctioned when the renovation of the whole building would start, some of the materials chosen were not to the designer's desired standard. These materials were the wood laminate flooring and the small quantity of MDF used to repair some of the pieces mentioned earlier. Nevertheless, given the temporality of the project, the restricted budget, and the destination of the materials (in the case of the MDF board) the designer found the choices justifiable. The rooms were filled with furniture manufactured out of fiberboard, and there was little intervention that could be done to improve it other than covering it with paint, such as in the case of rooms 628 and 638. This proved to be a learning experience, and an insight into how problematic the use of wood composite materials truly is, and how important it is to use quality materials in general when building.

The recovery of neglected spaces and objects can be an avenue for business. In the Helsinki, Finland, area a large number of organizations for re-use, re-marketing, as well as product maintenance services are available to designers and to the community.[95] Events are organized annually to promote the re-use and the recycling of materials and products, such as Kierrätystehdas[96] (Recycling Factory), where companies and organizations that promote a sustainable lifestyle can offer information or sell their products to the public. The Helsinki region also prides itself with its flea markets and Siivouspäivä[97] (Cleaning Day), which gather to the streets where everyone can sell and give away their surplus. These efforts, and others like them, are needed to support a sustainable economy, where all is valued and where social and cultural ecology become the goals of a community.

[95] See Appendix 1.
[96] http://www.kierratystehdas.fi/?lang=en_us.
[97] http://siivouspaiva.com/en_EN/.

A positive direction in the business of recent years is that companies have begun to offer renovation services as part of their practice. While the example of Nikari Oy was discussed earlier in this thesis, the topic of renovation services will be expanded in this section, in the case of Martela Oyj.[98]

Martela is one of the leading Finnish furniture manufacturers, founded in 1945 by Matti S. Martela. The company supplies furniture for the office and hospitality markets, and sells mainly in Finland, but also internationally. A producer of quality office furniture, Martela offers a variety of services to its customers, which include interior design, redecoration, maintenance, removal, and asset management. Starting with the opening of a very successful furniture outlet shop, which now functions in six Finnish cities, Martela slowly developed a business strategy that now offers a full renovation package to their customers, including the recycling of old furniture. On the 25 of March 2014, the author met with Anne-Maria Peitsalo from Martela, to discuss about their recycling and renovation services, how they work in practice, and how their customers have received these services.

The process of renovation begins with a full assessment of assets, at the end of which the Martela team, together with the customer, will decide what furniture items will be kept, what will be renovated or recycled, and what will be disposed of. Items that are in a very good condition will be kept as such, or perhaps upgraded in finish, and furniture pieces with small damage will be repaired when possible. The process then continues with design and sales of new furniture that will match the existing space and with additional renovation services, depending on the contract.

The conditions for furniture repair are most successful when Martela is the manufacturer of these items, since the necessary parts for replacement are easily accessible, but the items that cannot be renovated will be recycled by material, or sent to energy waste. Metal is an easy material to recycle in this situation, but plastics, wood based materials such as fiberboard or MDF, and upholstery materials qualify as energy waste. Although more could be recycled, as Anne-Maria explained, recycling is difficult because of the volume necessary to justify the action in economic terms, and mostly because of the lack of services in this area. The market will grow when all the services needed for the full recycling of materials will be in place in Finland, but it will remain problematic in the countries where such a system does not exist.
It is important to mention that the development of services Martela offers

[98] http://martela.com.

Neulamäki School in Kuopio, Finland,
design Reetta Ahola and Martela

in the direction of renovation and recycling is in many ways customer driven. The market is developing in this direction, as people start to appreciate the value of their furniture and find it important to reuse it. However, it is difficult to estimate the exact environmental impact of such an activity. Not only is the information about old pieces of furniture difficult to obtain, but also in the case of Martela and that of other large firms, the materials for manufacturing can be difficult to monitor. While the standards of quality are easier to keep track of, small suppliers do not always keep records of where their materials originate. Nevertheless, the Martela team tries to control its supply chain and works mainly with European companies to manufacture furniture components, and most importantly, the company is concerned with tending to the needs of their customers, which results in the constant development of services offered.

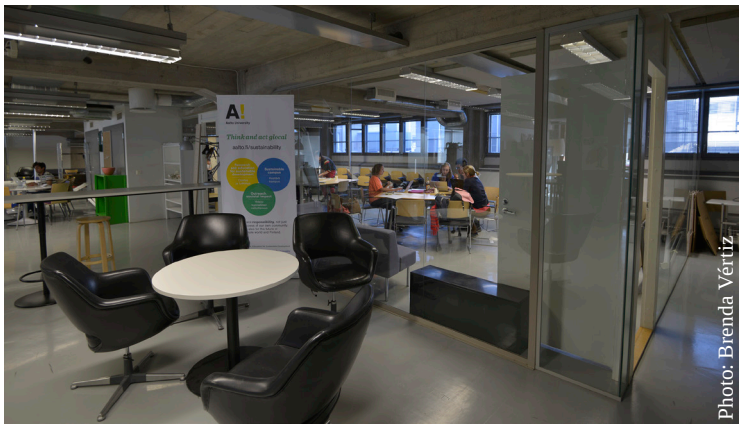
The example of Martela and the company's work is important to the renovation market because the company has the resources to offer these services on a larger scale. Since Martela is also a furniture manufacturer, all of the infrastructure the company uses in manufacturing can also be made available for remanufacturing and repair. As Anne-Maria mentioned, this project has been a success for the company, and one can assume also profitable.

Aalto University,[99] located in the Helsinki region, is one of the leading universities in Finland. Founded in 2010, the university is a joint program of three schools that merged, The Helsinki University of Technology, The Helsinki School of Economics, and The University of Art and Design Helsinki. The mission of Aalto University is to educate its students in a multidisciplinary environment and to be a leader in the research field locally and internationally.

As part of its mission, Aalto University joined the International Sustainable Campus Network (ISCN) that "provides a global forum to support leading colleges, universities, and corporate campuses in the exchange of information, ideas, and best practices for achieving sustainable campus operations and integrating sustainability in research and teaching."[100] As part of this initiative, the university is committed to reporting and improving its activities on three principles of sustainability: principle one – buildings and their sustainability impacts, principle two – campus-wide planning and target setting, and principle three – integration of research, teaching, facilities and outreach. To achieve its goals, the university established two working groups, the Sustainable Campus Board, which deals with the direct and indirect impacts of the campus, and the Academic Roundtable for Sustainability, that focuses on academic and outreach activities.

For relevance to the subject of this thesis, the author has selected to focus on Aalto University's efforts to manage its facilities and campus sustainably. These efforts are partly recorded in the university's Sustainable Campus Charter Report for 2013[101] and map the progress the institution has made throughout the year. An example of these efforts is the goal to prevent unnecessary waste and to decrease the amount of waste sent to the landfill. This is pursued partly by recycling waste properly, especially during removals, and reusing office furniture and supplies. Further, a recycling center run by the students has been opened on the campus premises, the Otaniemi Recycling Center,[102] and an internal platform for the re-use of university goods has been established. Modeled after the student platform for recycling, Sharetribe,[103] Aalto Arvo[104] is a pilot project developed together with the students for reusing research equipment and materials, IT resources, and furniture. The project will run through 2014, and will be reviewed for relevance at the end of the year. In

[99] http://www.aalto.fi/en/.
[100] http://www.international-sustainable-campus-network.org.
[101] Aalto University, ISCN-GULF *Sustainable Campus Charter Report 2013*, 2013, https://noppa.aalto.fi/noppa/kurssi/21c00700/lisatty10483/21C00700_liite_ennakkotehtavaan_3.pdf.
[102] http://kierratyskeskus.ayy.fi/wiki/index.php/Main/HomePage?userlang=en.
[103] https://aalto.sharetribe.com/en/.
[104] https://arvo.sharetribe.com/en.



Aalto University Creative Sustainability meeting place, design Caroline Knappers, and Brenda Vértiz

addition to these projects, the university reuses its furniture when new spaces are needed. Such an example is the creation of the space for the Master's Degree Programme in Creative Sustainability[105] in 2014, which has been designed by recent graduate Caroline Knappers, and student Brenda Vértiz, with the use of existing furniture from the storage of the university. The designers searched through the storage premises for items to fit their design concept, and as a result, only few new items were purchased. These examples, and other achievements, show that at Aalto University it is not difficult to see the goal of pursuing sustainable thinking applied into practice. More so, the efforts the institution has made on educating new professionals and fostering a sustainable mindset are reaping positive results and the university serves as an example to other organizations and businesses that want to join in the effort of attaining mindful consumption.

[98] http://acs.aalto.fi.

This MA thesis work has touched upon reasons for bringing renovation to an equal stand as new construction in the practice of the interior designer and has provided the author's personal experience obtained from the work on a completed renovation project to support its claims. Through research completed for this work, the author found that while the design approach presented here can be applied to large scale projects, as shown in the examples of Martela Oy and that of Aalto University, a proper maintenance of spaces would prevent larger buildings from degrading to a state where significant portions of the furniture and finishes, if not all, would need to be removed and replaced with new ones. This maintenance would require the supervision of staff hired permanently for this purpose, because it would not only be less stressful and time consuming to renovate gradually and to upkeep a space, but it would also be more financially viable in the long term.

Further, the author found that in the saturated market our economies are facing today, it only makes sense to preserve the condition of the existing building and material stock, and to follow the guidelines of a circular model for economy that can transform the reality of a broken society in environmental distress into a healthy living environment. The designer can involve herself/himself in this process directly, by conforming to the norms established by a sustainable practice and by educating clients to appreciate ecological values. As discussed in this thesis, the clients have already started to show interest in preserving as much as possible from their stock of assets when renovating, an attitude that has perhaps been the result of the sustainability talk in the media of recent years. Whatever the reason for this shift in thinking, from disposable material goods to cherished objects with history, the building market is moving in a positive direction, at least in Finland.

While working on this thesis, the author deepened her understanding of the importance of design education and arrived at the conclusion that "we can make no better higher-leverage investments for the future than improving the quality of designer's 'mindware' – assets that, unlike physical ones, don't depreciate but, rather, ripen with age and experience."[106] A designer can accomplish great progress in his/her work, when he/she is equipped with the knowledge of practice and a true appreciation for materials, their properties, and their application in manufacture and construction. While it is natural that knowledge can be gained from discussions with other professionals, self exposure to other tasks than that of designing will improve one's

[106] Hawken, Lovins, and Lovins, *Natural Capitalism*, 111.

understanding for the other's work and expertise, as well as lead to one's own better practice.

Further, the author found that design out of the office and time spent on site will significantly affect the outcome of a project. While doing research for this thesis and working on the project presented here, the author has discovered a tremendous improvement in her work when a significant time was spent designing on site. Not only can one notice all the small details of a space, one can more clearly perceive its needs. When working on a renovation project, spending a substantial amount of time in the space to be designed is perhaps of even move importance than when working on a new construction, as a perception of the space and its existing elements can be fully gained before starting to plan.

Another finding relates to the importance of gaining a thorough understanding of material and furniture quality that aids in planning for an extended life cycle. This understanding is not easy to gain without fieldwork and hands on experience with materials. A personal engagement in manufacturing processes will diversify one's skills when working on a personal project, such as the author's experience presented in this work. However, meetings and discussions with individuals that are engaged in the process of manufacturing and repairing will also deepen this understanding. Knowledge of material and furniture quality and maintenance is crucial to the successful aging process of a project and of significant importance to the interior designer that is primarily responsible for specifying these components of a building.

While there are many positives to completing a renovation project, which pertain to the sustainability aspects presented in this work, it is important to mention that the designer with a clear intent of practicing renovation faces many difficulties. These difficulties can arise from the fact that people do not have a common understanding of what "renovation" actually means. The modern mentality has applied the term to projects that involve the removal of all existing elements from an interior and their replacement with newer products. Further, there is not always a clear understanding of value and quality in materials and furniture. While doing research for this work, the author found that there is lack of awareness even among designers regarding reparability, as well as construction methods, that ensure a long life in products.

As a conclusion to this work, the author acknowledges the need for further research in the field of renovation, particularly from an economic per-

spective, which usually provides good incentives to the customer for pursuing the methods presented in this work. Additionally, research and education in the field of design for maintenance and repair would increase the awareness of designers about the possibilities of expanding their knowledge on this track and influencing businesses and clients in their choices. The author recognizes that some of the reluctance towards reusing and recycling of goods and materials is due to trends and a lack of awareness. As discussed in the second chapter of this thesis on the importance of renovation and valuing our material culture, the majority of people follow the lifestyle marketed to them by the media and the social structures they inhabit. When these systems will find the interest in advertising an alternative lifestyle as normality and not simply a fashion, perhaps we will see a significant increase in the appreciation for renovation practices.

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Alcantara®: http://www.alcantara.com/#/en/home

American Institute of Architects: http://www.aia.org.

Artek 2nd cycle and vintage: http://2ndcycle.artek.fi.

Breeam: http://www.breeam.org.

Cradle to Cradle Products Innovation Institute: http://www.c2ccertified.org.

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United Nations Environmental Programme: http://www.unep.org.

US Green Building Council: http://www.usgbc.org/leed.

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Arabia Helsinki:
http://www.arabiahelsinki.fi/en/
A region in Helsinki with a history for the arts, Arabia is home to some factory outlet shops.

Design District Helsinki:
http://www.designdistrict.fi
The design district is a network of shops where one can find numerous antique and second hand stores, as well as new quality furniture.

Fida International:
http://www.fida.info
A non-profit organization, Fida International collects donations that are sold in their shops. These include furniture and other necessities for the home.

Fonecta.fi:
http://www.fonecta.fi
Online search engine for Finnish businesses. Here one can find anything from upholsterers to restorers.

Kierrätyskeskus:
http://www.kierrätyskeskus.fi
The recycling centre has five shops in the Helsinki region, where one can find furniture and other bargains.

Helsingin Kirpputorit:
http://www.kirpputorihaku.com/kirpputori/helsinki
A list of all the second hand shops in Helsinki, some of which also sell furniture.

Kruununhaan Kivijalkayrittäjät:
http://www.krunikanyrittajat.fi/yrityksia_ja_palveluja/antiikki_ja_sisustus/
Kruunuhaka is home to many small businesses, including antique and second hand furniture shops.

Laurizon's:
http://www.lauritzon.fi
One of the places in Helsinki where one can order good quality fabrics and other interior finishes.

Rakennusapteekki-Byggnadsapoteket
http://www.rakennusapteekki.fi/
A place to order anything old needed for renovation, as well as good quality tools and many more.

Re:Office:
http://www.re-office.fi/index.php
A shop with used or new office furniture sold at a discount.

Vallila Interior:
http://www.vallilainterior.fi/en
Vallila offers a wide arrange of services, from interior design to renovation. The company also sells all the materials needed for an interior, furniture and finishes.

26.09.2012 Interview with Peter Eklund, furniture restorer

Question 1: What kind of education do you have?

Question 2: For how many years have you worked in the business?

Question 3: Who are your clients?

Question 4: How do you receive new commissions?

Question 5: Can you share any details about pricing?

Question 6: What kind of furniture can be restored?

Question 7: How long does furniture last?

Question 8: How long does furniture renovation last?

Question 9: What kind of materials do you use in renovation? (toxicity as a factor)

Question 10: Do you see a difference in a quality between furniture produced today and that produced in the past?

Question 11: How long ago was it that furniture used to be made of good quality?

11.03.2014 Interview with Jenni Roininen, Nikari Oy

Question 1: First I would like to know a bit about you, your education and work experience. Could you describe your role in Nikari?

Question 2: As the creative director for Nikari, you must have a lot of knowledge about how everything is made. Could you guide me through the manufacturing process of one of your products?

Question 3: Nikari prizes itself for the quality of furniture it produces. Have there been any quality assessment studies done for your furniture?

Question 4: Part of the quality in furniture is its ability to be repaired. Could you please explain how your furniture is designed so that it can be repaired, what does this entail?

Question 5: The choice for material in all your furniture is wood, solid wood; what do you have to say about wood composites? Why not use particleboard or MDF as well, for example?

Question 6: Does Nikari provide furniture restoration services? Do you recycle your own furniture?

Question 7: Why was the company established with the values of quality in production and respect for the environ-

ment? Were these values as important at the time of establishment as they are now?

Question 8: What are the important steps for running a sustainable business in furniture manufacturing?

Question 9: Could you compare Nikari to the ”business as usual” furniture manufacturer? What are the common traits and the differences?

Question 10: Nikari is now producing furniture in Kyoto, Japan. Are the materials locally harvested as well? How does the process work there?

Question 11: How much furniture do you produce and sell annually? Where is this furniture sold?

Question 12: How many employees does Nikari have?

Question 13: Is there anything else you would like to add to this interview?

12.03.2014 Interview with Jorma Valkama, interior architect

Question 1: First, could you please tell me about yourself and your education?

Question 2: What is the focus of your work?

Question 3: How easy or difficult is it to find projects?

Question 4: How did you enter the business and what attracted you to work in renovation?

Question 5: Who are your clients?

Question 6: Can you guide me through a project from start to finish? What is your involvement?

Question 7: Who else is involved in a project?

Question 8: How do you approach a project? What is your philosophy of work?

Question 9: What kind of materials do you use?

Question 10: From your experience, what are the best materials to use? What lasts and what does not?

Question 11: What are some of the common problems that you solve in the spaces you renovate?

Question 12: What is the lifespan of an interior renovation?

Question 13: How can one take care of a space in order to prolong its life?

Question 14: Could you mention some specific projects you have worked on?

Question 15: How much renovation work is done in Finland/the region?

25.03.2014 Interview with Anne-Maria Peitsalo, Martela Oyj

Question 1: First, please tell me about yourself.

Question 2: Could you explain what the Martela recycling process entails?

Question 3: How much work does Martela do at the moment with this project? Do you have a percentage?

Question 4: What happens to all the products that are taken out of offices?

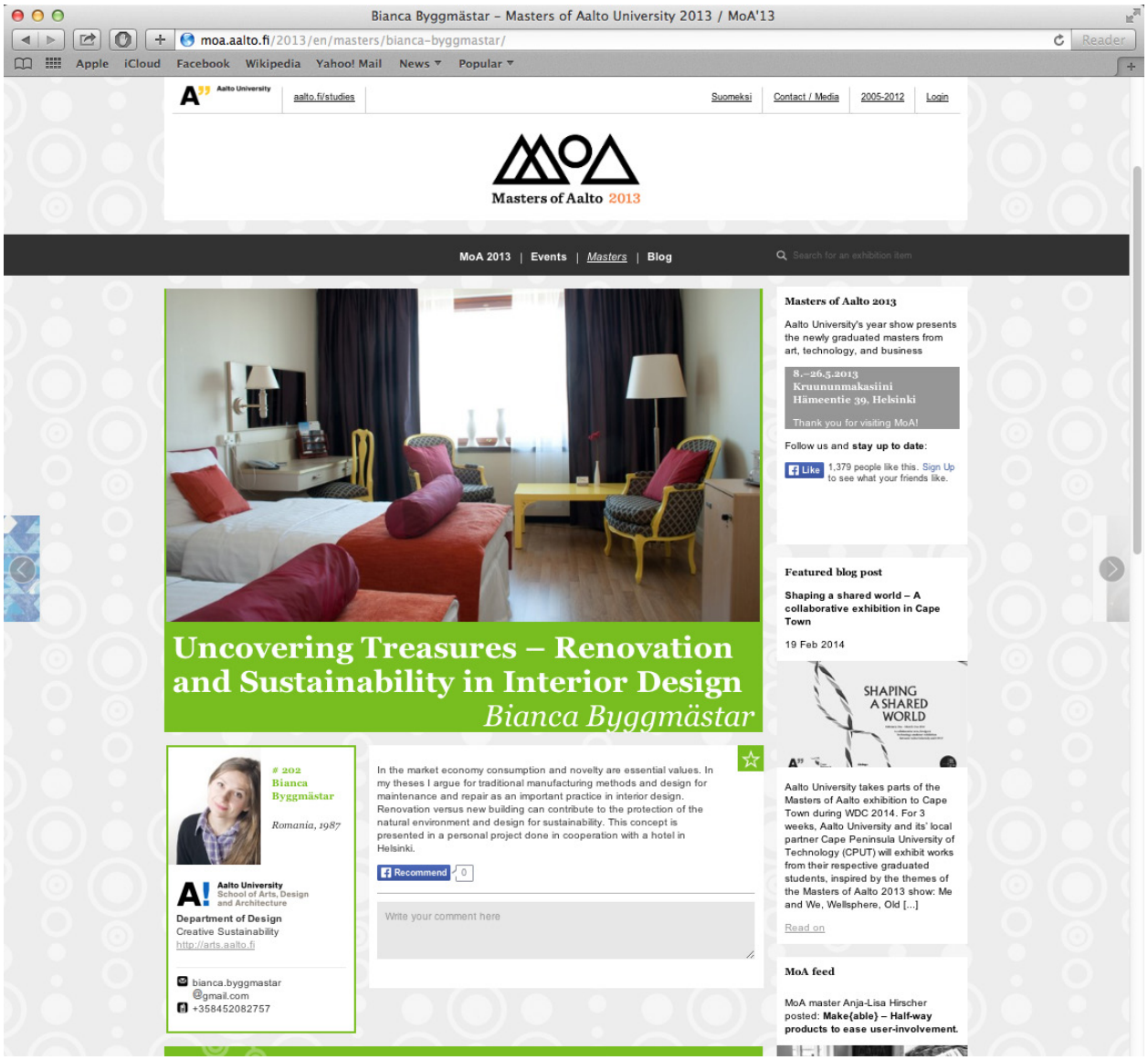
Question 5: How are they recycled? Are any materials re-used?

Question 6: Where are Martela's suppliers from? Who produces your furniture? Who recycles?

Question 7: How has this project been a success? Has there been profit registered?

Question 8: Are there any other manufacturers in Finland that do the same? Is there competition?

Question 9: Where did the idea of expanding your business in this direction occur?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In the market economy consumption and novelty are essential values. In my theses I argue for traditional manufacturing methods and design for maintenance and repair as an important practice in interior design. Renovation versus new building can contribute to the protection of the natural environment and design for sustainability. This concept is presented in a personal project done in cooperation with a hotel in Helsinki.
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19 Feb 2014
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Aalto University takes parts of the Masters of Aalto exhibition to Cape Town during WDC 2014. For 3 weeks, Aalto University and its' local partner Cape Peninsula University of Technology (CPUT) will exhibit works from their respective graduated students, inspired by the themes of the Masters of Aalto 2013 show: Me and We, Wellsphere, Old [...]
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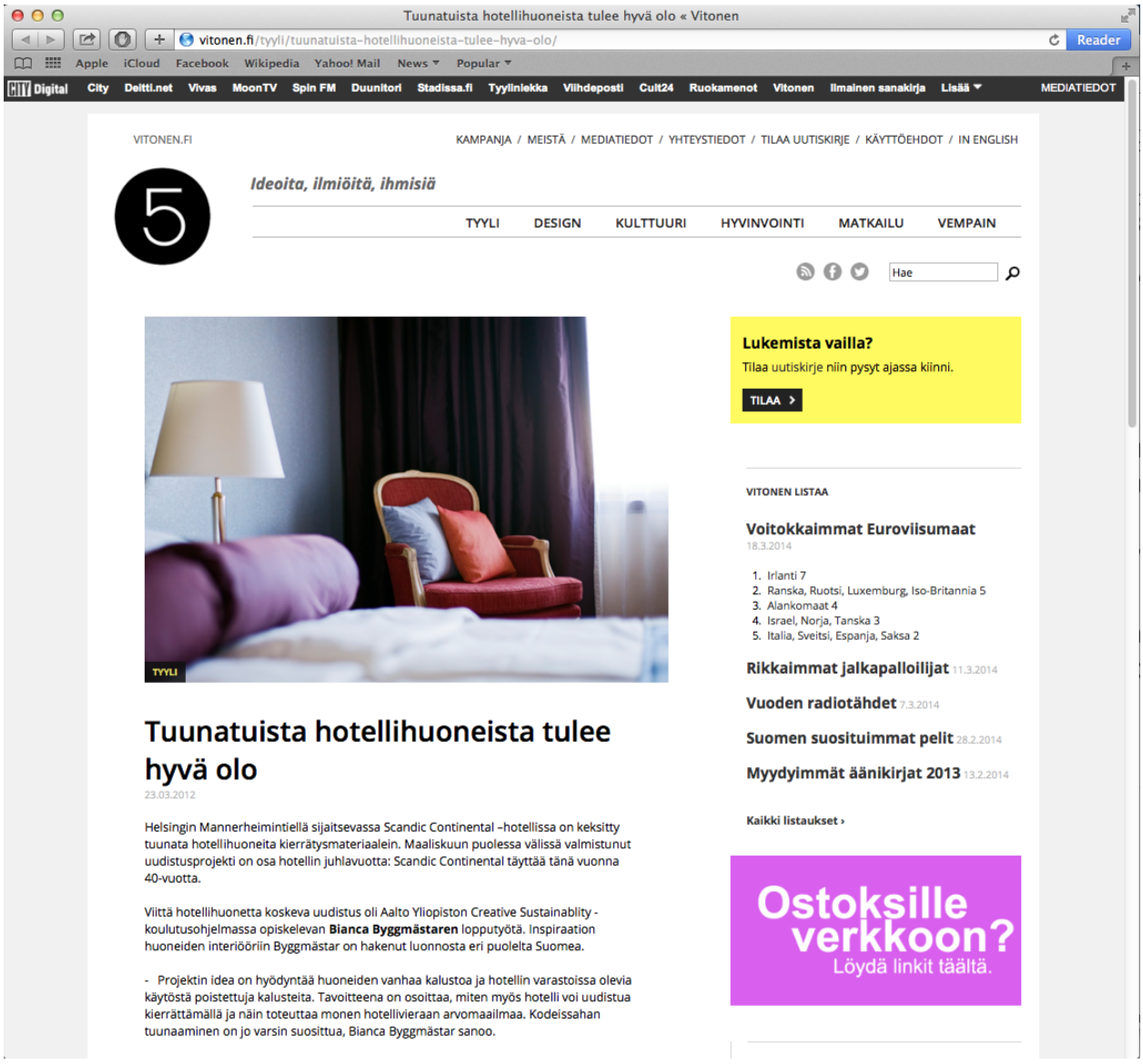
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Ideoita, ilmiöitä, ihmisiä
TYYLI DESIGN KULTTUURI HYVINVOINTI MATKAILU VEMPAIN
Hae
TYYLI
Tuunatuista hotellihuoneista tulee hyvä olo
23.03.2012
Helsingin Mannerheimintiellä sijaitsevassa Scandic Continental –hotellissa on keksitty tuunata hotellihuoneita kierrätysmateriaalein. Maaliskuun puolessa välissä valmistunut uudistusprojekti on osa hotellin juhlavuotta: Scandic Continental täyttää tänä vuonna 40-vuotta.
Viittä hotellihuonetta koskeva uudistus oli Aalto Yliopiston Creative Sustainablity -koulutusohjelmassa opiskelevan Bianca Byggmästaren lopputyötä. Inspiraation huoneiden interiööriin Byggmästar on hakenut luonnosta eri puolelta Suomea.
- Projektin idea on hyödyntää huoneiden vanhaa kalustoa ja hotellin varastoissa olevia käytöstä poistettuja kalusteita. Tavoitteena on osoittaa, miten myös hotelli voi uudistua kierrättämällä ja näin toteuttaa monen hotellivieraan arvomaailmaa. Kodeissahan tuunaaminen on jo varsin suosittua, Bianca Byggmästar sanoo.
Lukemista vailla?
Tilaa uutiskirje niin pysyt ajassa kiinni.
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2. Ranska, Ruotsi, Luxemburg, Iso-Britannia 5
3. Alankomaat 4
4. Israel, Norja, Tanska 3
5. Italia, Sveitsi, Espanja, Saksa 2
Rikkaimmat jalkapalloilijat 11.3.2014
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May 2014